

October 15, 2005

Mr. Noman Chowdhury
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject: Quarterly Site Conceptual Model Update for the Third Quarter 2005
Mobil Station 18MLJ
5005 North Long Beach Boulevard
Long Beach, California
CRWQCB Case No. 908050452A

Mr. Chowdhury:

At the request of ExxonMobil Oil Corporation (ExxonMobil), Environmental Resolutions, Inc. is submitting the Third Quarter 2005 ExxonMobil Quarterly Groundwater Monitoring and Status Report for the above-referenced site. The format utilized for the report consolidates groundwater sampling (where applicable), Title 23, Subchapter 16 reporting and consultant progress updates for ExxonMobil into one summary report.

Please call me at (949) 457-8954 if you have any questions.

Sincerely,
Environmental Resolutions, Inc.

George E. Salley
Senior Project Geologist
P.G. 6308

Cc: Ms. Marla D. Guensler, ExxonMobil
Ms. Carmen Piro, Long Beach Department of Health and Human Services

**EXXONMOBIL OIL CORPORATION (EXXONMOBIL)
SITE CONCEPTUAL MODEL UPDATE**

Site Status: Active Mobil Station
Station Number: 18MLJ Address: 5005 North Long Beach Boulevard, Long Beach, CA
ExxonMobil Environmental Engineer: Ms. Marla D. Guensler
Consulting Company/Contact Person: Environmental Resolutions, Inc. (ERI)/George E. Salley
Primary Agency: Mr. Noman Chowdhury, California Regional Water Quality
Control Board - Los Angeles Region (CRWQCB)
320 West 4th Street, Suite 200, Los Angeles, CA 90013
Other Agencies to Receive Copies: Ms. Carmen Piro
Long Beach Department of Health and Human Services
2525 Grand Avenue, Long Beach, CA 90815

WORK PERFORMED THIS QUARTER [Third - 2005]:

- o 07/06-07/05 – Conducted an air sparge/soil vapor extraction (AS/SVE) feasibility study at the site.
- o 07/15/05 – Submitted the quarterly report for the second quarter 2005.
- o 08/04/05 – Performed quarterly purge groundwater monitoring and sampling. Properly recycled purge water at Crosby & Overton of Long Beach, California, under a non-hazardous waste manifest (attached).
- o 09/13/05 – ExxonMobil submitted a report to the CRWQCB containing the preliminary site conceptual model, site characterization report and plume travel time model.
- o A copy of the manifest for recycling of purge water during the second quarter 2005 is included with this report.

WORK PROPOSED FOR NEXT QUARTER [Fourth - 2005]:

- o Perform quarterly purge groundwater monitoring and sampling.
- o Submit a quarterly report.
- o Prepare and submit a final remedial action plan based on the engineering data obtained from the AS/SVE feasibility study.

Current Phase of Project:	<u>Monitoring and sampling / Remediation</u>
Frequency of Monitoring and Sampling:	<u>Quarterly</u>
Is LPH Present on Site:	<u>No</u>
Cumulative LPH Recovered to Date:	<u>None</u>
Water Wells or Surface Waters within 1000' & Their Respective Directions:	<u>None</u>
Permits for Discharge:	<u>NA</u>
Current Remediation Techniques:	<u>None</u>
Depth to Groundwater:	<u>26 to 28 feet bgs – measured on 08/04/05</u>

SITE CONCEPTUAL MODEL UPDATE

The preliminary site conceptual model (PSCM) for this case was prepared by ExxonMobil and submitted to the CRWQCB on September 13, 2005. The following sections provide an update to the PSCM based on the most recent data obtained at the site.

SITE DESCRIPTION

The subject site is an active Mobil service station which sells Mobil-branded gasoline, located at the northwestern corner of North Long Beach Boulevard and Del Amo Boulevard in Long Beach, California (Site Location Map, Plate 1). The site facilities consist of a service station building containing a Mobil Mart food store. The fueling system consists of three unleaded-gasoline underground storage tanks (USTs), one diesel UST, seven fuel dispensers (six gasoline and one diesel), and the associated product piping. The locations of the fueling system components, as well as the locations of soil borings, groundwater monitoring wells, and other relevant site features, are shown on the Generalized Site Plan (Plate 2).

The area surrounding the site consists of commercial businesses, apartments and residential housing. A Chevron service station is located south of the site across Del Amo Boulevard. A Shell service station is located on the southeastern corner. A 7-Eleven food store and a McDonald's restaurant are located on the northeastern corner of the intersection. The vacant lot directly north of the site is being currently developed as an elementary school. The area surrounding the site is shown on the Aerial Photo Map (Plate 3).

BACKGROUND

The following is a brief description of the previous work conducted at the site. For detailed information, refer to the reports listed in the reference section of this site conceptual model update (SCMU). The locations of the soil borings and groundwater monitoring wells drilled and installed during the previous work at the site plus other relevant site features are shown on Plate 2. The analytical results from soil sampling conducted during previous investigations are presented in Table 1. Groundwater monitoring and sampling data for the third quarter 2005 is summarized in Table 2. The cumulative water level measurements and groundwater analytical results are presented in Table 3.

Subsurface Investigations

In August 1989, American Environmental Management Corporation (AEM) conducted a site assessment that consisted of drilling and sampling six soil borings, and completing three of the soil borings as groundwater monitoring wells (AEM, 1989). The results of this investigation prompted the City of Long Beach Department of Health and Human Services (LBDHHS) to transfer the case to the CRWQCB for further review and oversight. The case was transferred on October 4, 1989, and the CRWQCB issued case file No. 908050452 to this site. Subsequent to the transfer of this case to the CRWQCB, additional site assessment and remedial testing activities were performed at the site which resulted in the installation of nine groundwater monitoring wells (five on site and four off site), three on-site air sparge wells and two on-site vapor extraction wells. Quarterly groundwater monitoring was conducted at the site from first quarter 1993 through second quarter 1996 (TRAK Environmental Group, 1996). During this time period, depth to groundwater ranged from approximately 27 to 36 feet bgs, and the groundwater flow direction was consistently toward the southwest. On July 23, 1996, the CRWQCB issued an Underground Storage Tank Case Closure Letter, and required that all wells be properly destroyed. On November 11, 1996, Remedial Management Corporation (RMC) submitted a well abandonment report stating that all of the wells (on site and off site) had been abandoned by pressure grouting (RMC, 1996).

In January 2001, H.B. Covey of Pomona, California, conducted a fueling system upgrade at the site. The upgrade consisted of removing and replacing the fuel dispensers and related product piping. FREY Environmental, Inc. (FREY) of Newport Beach, California, performed soil sampling activities in conjunction with the fueling system upgrade. FREY personnel collected soil samples from six locations adjacent to the fuel dispensers and from one location adjacent to the product piping. Methyl tertiary butyl

ether (MTBE) in soil was measured at a maximum concentration of 50 milligrams per kilogram. (FREY, 2001)

ExxonMobil transferred environmental consulting responsibilities for this site to ERI in October 2002. In subsequent case reviews between ExxonMobil and ERI, a decision was made to assess the condition of soil and groundwater beneath the site. This decision was based on the concentrations of fuel oxygenates in soil detected during the aforementioned fueling system upgrade, and the juxtaposition of sensitive receptors in the area. In February 2003, ExxonMobil submitted a work plan for the installation of three groundwater monitoring wells at the site.

In April 2003, ERI conducted an initial site assessment which consisted of drilling and sampling soil borings B1 through B3. Borings B1 and B2 were each completed as a groundwater monitoring wells MW1 and MW2, respectively. Boring B3 was completed as dual-completion groundwater monitoring/soil vapor extraction well MW3. During this investigation, groundwater was first encountered at approximately 30 feet bgs. The data presented in this report resulted in the LBDHHS transferring the case to the CRWQCB for further review and oversight. (ERI, 2003)

In October 2004, ERI conducted an additional site assessment which consisted of drilling and sampling off-site soil borings B4 through B6. The borings were completed as groundwater monitoring wells MW4 through MW6, respectively. The purpose of this investigation was to provide off-site delineation of fuel constituent concentrations in soil and groundwater. (ERI, 2004)

In March 2005, ERI drilled and sampled on-site boring B7 which was completed as groundwater monitoring well MW7. This well was installed to provide upgradient delineation in the northeastern portion of the site. (ERI, April 14, 2005)

In March 2005, ExxonMobil submitted an interim remedial action plan (IRAP) to the CRWQCB for an AS/SVE feasibility study at the site. The CRWQCB submitted a letter to ExxonMobil dated May 9, 2005 granting approval of the IRAP. In response to the approval, ERI drilled and installed remediation wells AS/SVE1 through AS/SVE4 in May 2005. The details of this activity will be reported in the final RAP.

Remediation

According to FREY, approximately 75 tons of hydrocarbon affected soil was generated during the aforementioned January 2001 fueling system upgrade project. The soil was removed from the site and transported for recycling to TPS Technologies, Inc.'s approved facility in Adelanto, California.

Since quarterly groundwater monitoring and sampling began in the second quarter 2003, a total of approximately 1,794 gallons of groundwater has been purged from the site wells. The purge water was transported to Crosby & Overton's (C&O) permitted facility in Long Beach, California, for recycling.

Quarterly Monitoring

Quarterly groundwater monitoring and sampling has been conducted at the site since the second quarter 2003. During that time, the average depth to groundwater at the site has been approximately 29 feet bgs, and groundwater flow direction has been toward the southwest. The most recent quarterly groundwater monitoring and sampling event took place on August 4, 2005. Compared to the average groundwater depth for the site, the depth to groundwater has decreased by approximately 2 feet. The maximum concentrations of benzene, total petroleum hydrocarbons as gasoline (TPHg) and MTBE were detected in well MW2 at concentrations of 6.26 micrograms per liter (µg/l), 5820 µg/l and 435 µg/l, respectively.

Groundwater gauging data for the third quarter 2005 is shown on the Groundwater Elevation Contour Map – 08/04/05 (Plate 4). Groundwater sampling data for benzene, TPHg, MTBE and tertiary butyl alcohol for the third quarter 2005 are shown on the isopleth concentration maps (Plates 5 through 8, respectively).

SENSITIVE RECEPTOR SURVEY

Sensitive receptors include water supply wells, schools, hospitals and surface water bodies within a 1-mile radius of the site. ERI performed a search to identify any water supply wells, schools, hospitals and surface water bodies within the sensitive receptor survey area. Each receptor identified by this survey is depicted on the Sensitive Receptor Map (Plate 9).

The closest water supply wells to the site are wells 905L and 906B, located approximately 2,170 feet southwest and 2,270 feet south of the site, respectively. A new elementary school is currently being constructed directly adjacent to the northern property line of the site, and the closest surface water body is the Los Angeles River which is located approximately 0.4 miles west of the site.

PLUME TRAVEL TIME ESTIMATE

The original plume travel time estimate (PTTE) was prepared by ERI using the CRWQCB's Non-Steady State Spreadsheet Analytical Model to evaluate the travel time for MTBE to reach the closest sensitive receptor to the site, and was submitted to the CRWQCB on September 13, 2005. As stated, the closest sensitive receptor is active production well 905L, located approximately 2,170 feet southwest of the site. This well is also designated as California State Well No. 4S13W12E01. The screened interval for the production well is reported to be from 360.5 feet bgs to 375.5 feet bgs. The location of the production well places it in line with the groundwater flow direction exhibited for this site. On-site well MW2 and off-site well MW5 generally fit the CRWQCB's modeling criteria that MTBE concentrations increase then decrease over time.

ERI used reasonable value ranges for groundwater velocity and dispersivity, based on site information, to match the concentration curves in wells MW2 and MW5. Based on the ranges of values for these parameters, and the conservative assumption that the drinking water well (point of exposure) is directly downgradient, the model predicts that an MTBE concentration of 5 micrograms per liter would occur at the aforementioned drinking water well in 91.3 years. Please note that the CRWQCB model is predicated on the assumption that the data truly denote a peak, that the peaks are not due to other groundwater dynamics (such as elevation changes), and that the two peaks modeled are from the same instantaneous release. Given that there are only three data points for monitoring well MW5, not all of these assumptions may be correct for this site.

It is ERI's opinion that no atypical site-specific conditions, with regard to transport, exist and that the site conditions pose little risk to the aforementioned point of exposure. It is also ERI's opinion that this model does not allow for a unique solution to the fuel constituent transport question. The model does not take into account the presence of aquitards between the shallow affected groundwater and the aquifers from which the supply well is pumping. Also, the model does not allow for the effects of natural attenuation (except dispersion) during transport. These two criteria would act to increase the time it would take for MTBE to reach the supply well, and would diminish the concentration of MTBE that finally reached the well (if any). In accordance with the CRWQCB requirements, the data contained in the model will be updated annually (during the second quarter), or as necessary based on changes in site conditions.

CONCLUSIONS

The site conceptual model for Mobil Station 18MLJ is that of a two-release scenario. This consists of an older release of fuel constituents that does not contain fuel oxygenates and a separate newer release that does contain fuel oxygenates. The old release is believed to have occurred prior to the case closure granted in 1996. The more recent release contains concentrations of fuel oxygenates originally prevalent in shallow soil at the site. Based on the quarterly groundwater sampling results to date, the fuel oxygenates detected in the shallow soil are now affecting the groundwater bearing zone.

REFERENCES

American Environmental Management, August 1989, Site Assessment, Mobil Station, 5005 Long Beach Boulevard, Long Beach, California.

California Department of Water Resources, June 1961 (reprinted May 1990), Bulletin Number 104, Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County, Appendix A, Ground Water Geology.

California Regional Water Quality Control Board – Los Angeles Region, July 23, 1996, Underground Storage Tank Case Closure, Mobil Service Station 18-MLJ, 5005 Long Beach Boulevard, Long Beach.

Environmental Resolutions, Inc., June 9, 2003, Letter Report for the Installation of Three Groundwater Monitoring Wells at Mobil Station 18-MLJ, 5005 North Long Beach Boulevard, Long Beach, California.

Environmental Resolutions, Inc., December 23, 2004, Groundwater Monitoring Well Installation Report, Mobil Station 18MLJ, 5005 North Long Beach Boulevard, Long Beach, California.

Environmental Resolutions, Inc., April 14, 2005, Groundwater Monitoring Well Installation Report, Mobil Station 18MLJ, 5005 North Long Beach Boulevard, Long Beach, California.

Environmental Resolutions, Inc., July 15, 2005, Quarterly Report for the Second Quarter 2005, Mobil Station 18MLJ, 5005 North Long Beach Boulevard, Long Beach, California.

Environmental Resolutions, Inc., September 13, 2005, Preliminary Site Conceptual Model, Site Characterization Report & Plume Travel Time Estimate, Mobil Station 18MLJ, 5005 North Long Beach Boulevard, Long Beach, California.

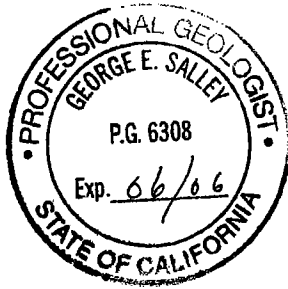
FREY Environmental, Inc., March 19, 2001, Fuel Dispensing Complex Soil Sampling, Mobil Service Station #18-MLJ, 5005 N. Long Beach Boulevard, Long Beach, California.

Remedial Management Corporation, November 11, 1996, Abandonment of Groundwater Monitoring, Sparge, and Vapor Extraction Wells, Mobil Station 11-MLJ, 5005 Long Beach Boulevard, Long Beach, California.

TRAK Environmental Group, Inc., July 25, 1996, Quarterly Progress Report, Second Quarter 1996, Mobil Service Station 11-MLJ, 5005 Long Beach Boulevard, Long Beach, California.

United States Geological Survey, 1964 (photorevised 1981), Long Beach, California, Quadrangle, 7.5 Minute Series Topographic Map.

Please call Mr. George E. Salley at (949) 457-8954 for any questions regarding this report.



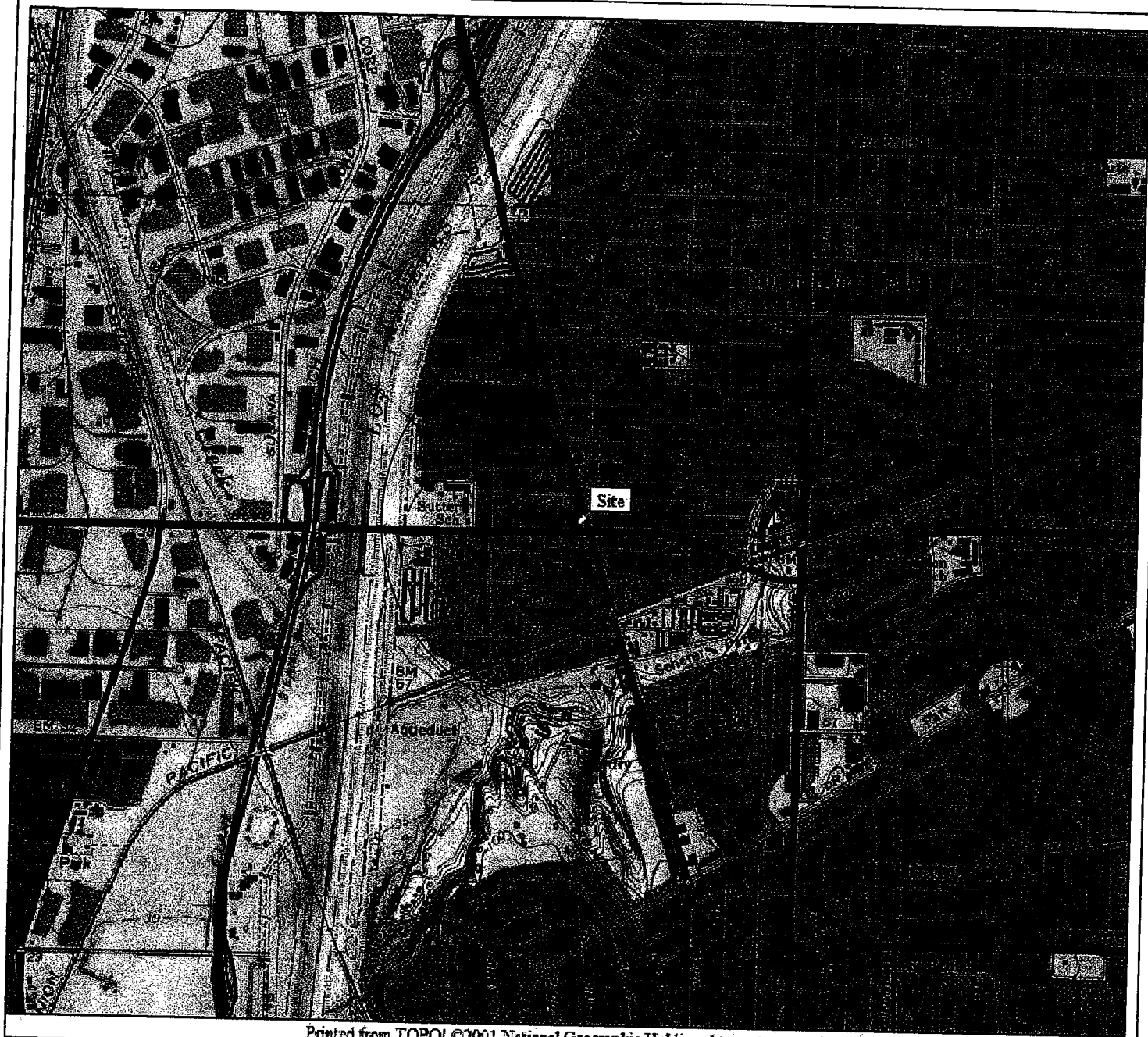
Respectfully Submitted,
Environmental Resolutions, Inc.

George E. Salley

George E. Salley
Senior Project Geologist
P.G. 6308

ATTACHED:

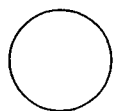
- o Site Location Map (Plate 1)
- o Generalized Site Plan (Plate 2)
- o Aerial Photo Map (Plate 3)
- o Groundwater Elevation Contour Map – 08/04/05 (Plate 4)
- o Benzene Groundwater Isopleth Concentration Map – 08/04/05 (Plate 5)
- o TPHg Groundwater Isopleth Concentration Map – 08/04/05 (Plate 6)
- o MTBE Groundwater Isopleth Concentration Map – 08/04/05 (Plate 7)
- o TBA Groundwater Isopleth Concentration Map – 08/04/05 (Plate 8)
- o Sensitive Receptor Map (Plate 9)
- o Cumulative Soil Analytical Results (Table 1)
- o Water Level Measurements and Groundwater Analyses (Table 2)
- o Cumulative Water Level Measurements and Groundwater Analyses (Table 3)
- o Non-Steady State Transport Model Spreadsheet
- o Laboratory Report and Chain-of-Custody Record
- o Purging and Sampling Records
- o Purging and Sampling Protocol
- o Non-Hazardous Waste Manifest for Third Quarter 2005



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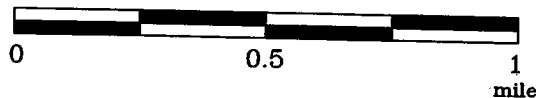
EXPLANATION



1/2-mile radius circle



APPROXIMATE SCALE



SOURCE:
Modified from a map
provided by
National Geographic's TOPO!



SITE LOCATION MAP

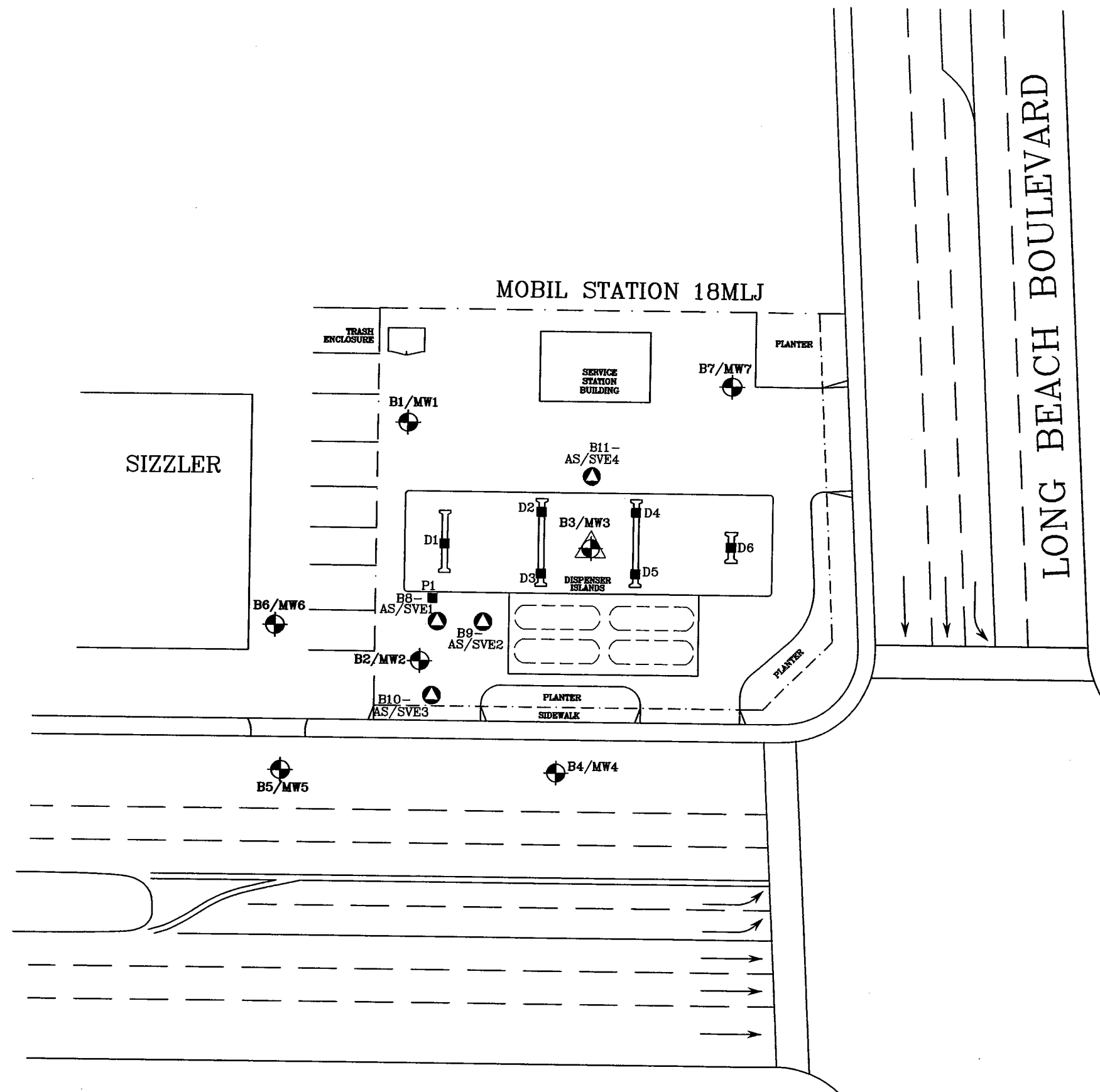
MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

PROJECT NO.

3163

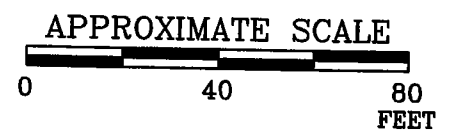
PLATE

1



EXPLANATION

- B7/MW7 Groundwater monitoring well
- B3/MW3 Groundwater monitoring/vadose zone well
- B11-AS/SVE4 Air sparge/soil vapor extraction well
- D6 Soil sample location (FREY Environmental, 1991)
- Underground storage tank



GENERALIZED SITE PLAN

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

FN 31630004



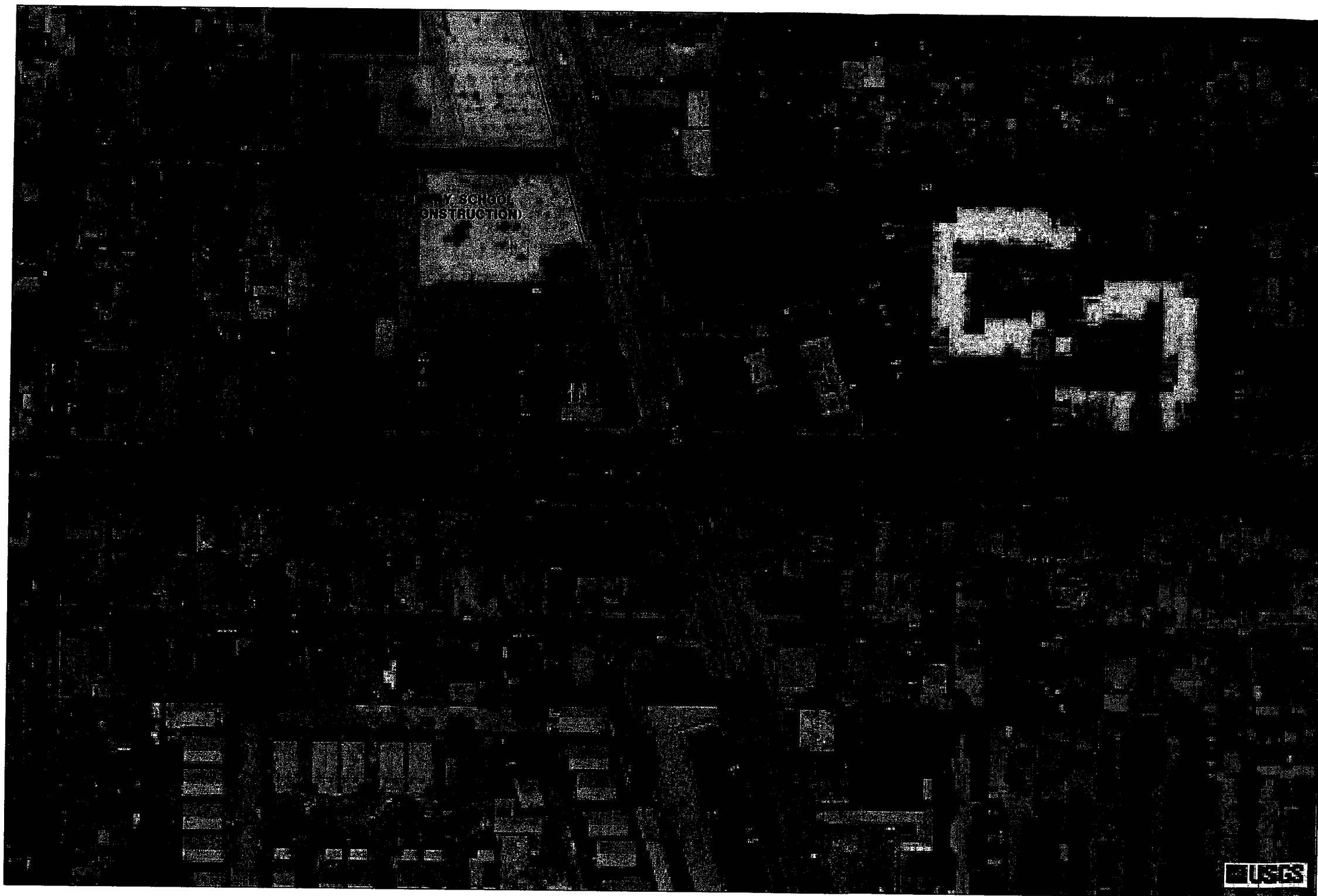
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PLATE

2

DATE: 10/12/05



NOT TO SCALE

AERIAL PHOTO MAP

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

FN 3163AERIEL



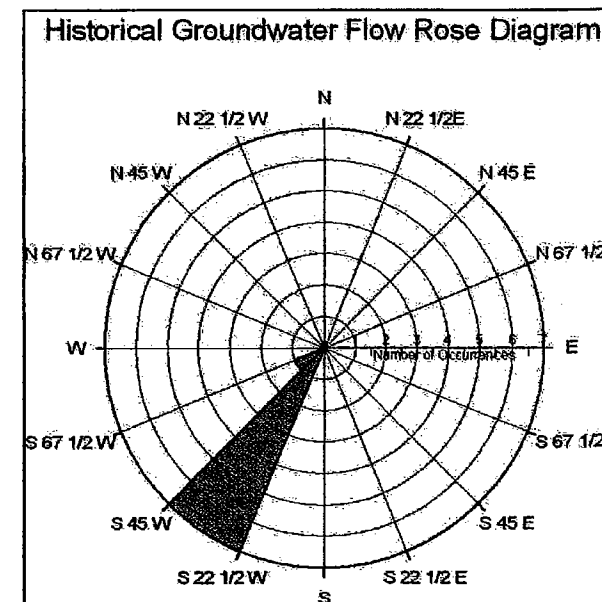
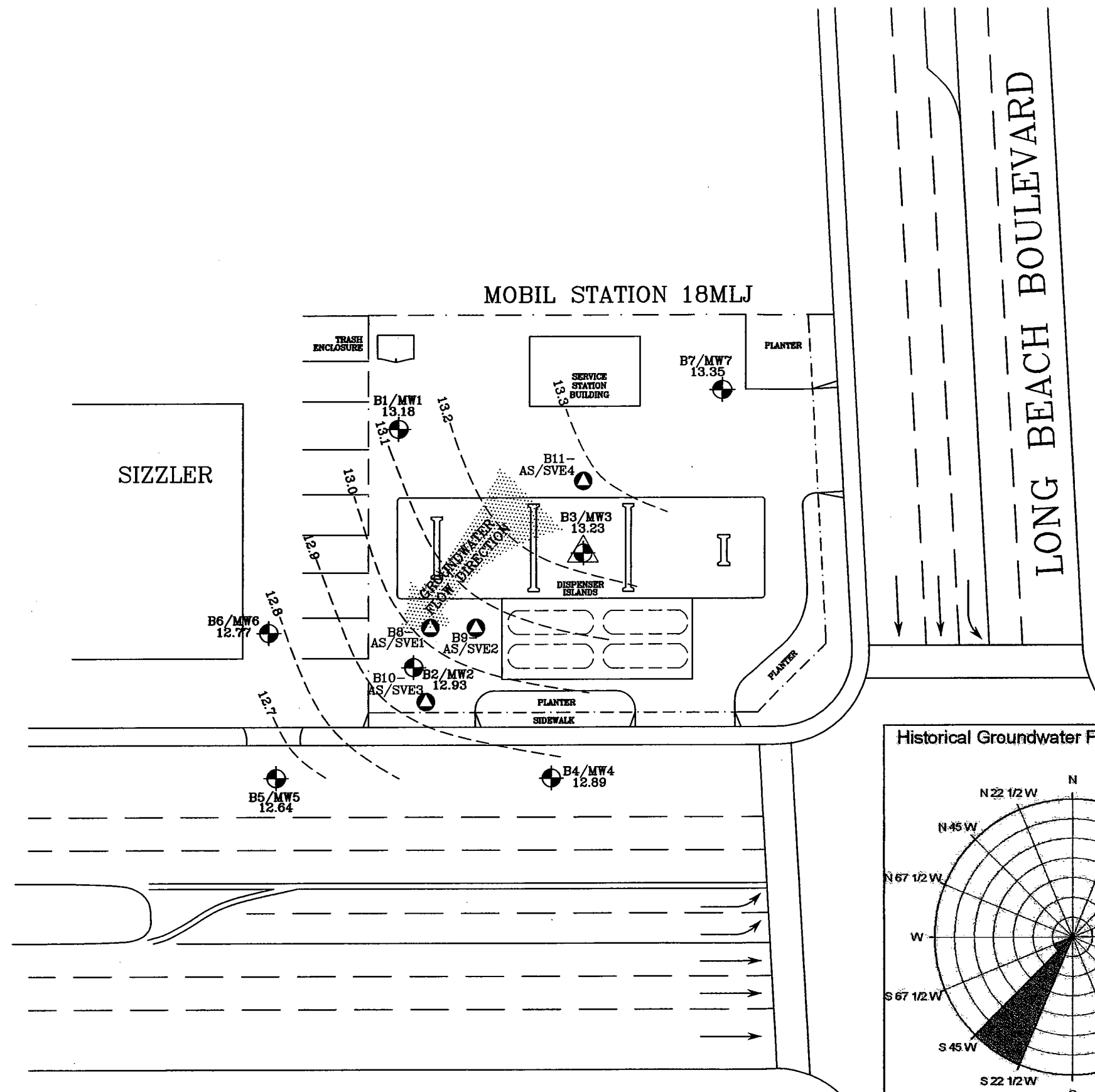
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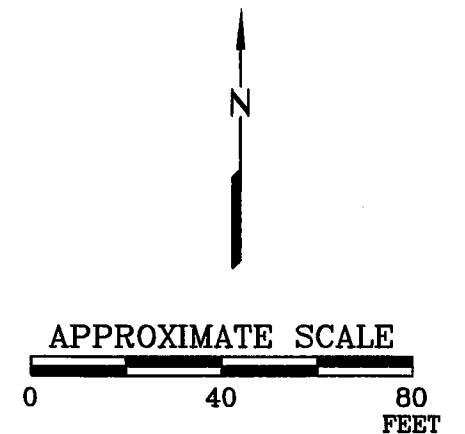
3

DATE: 10/12/05



EXPLANATION

- B7/MW7 Groundwater monitoring well
- B3/MW3 Groundwater monitoring/vadose zone well
- B11-AS/SVE4 Air sparge/soil vapor extraction well
- 13.35 Groundwater elevation (feet, relative to mean sea level)
- Line of equal groundwater elevation
- Underground storage tank



GROUNDWATER ELEVATION CONTOUR MAP 08/04/05

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

FN 31630004



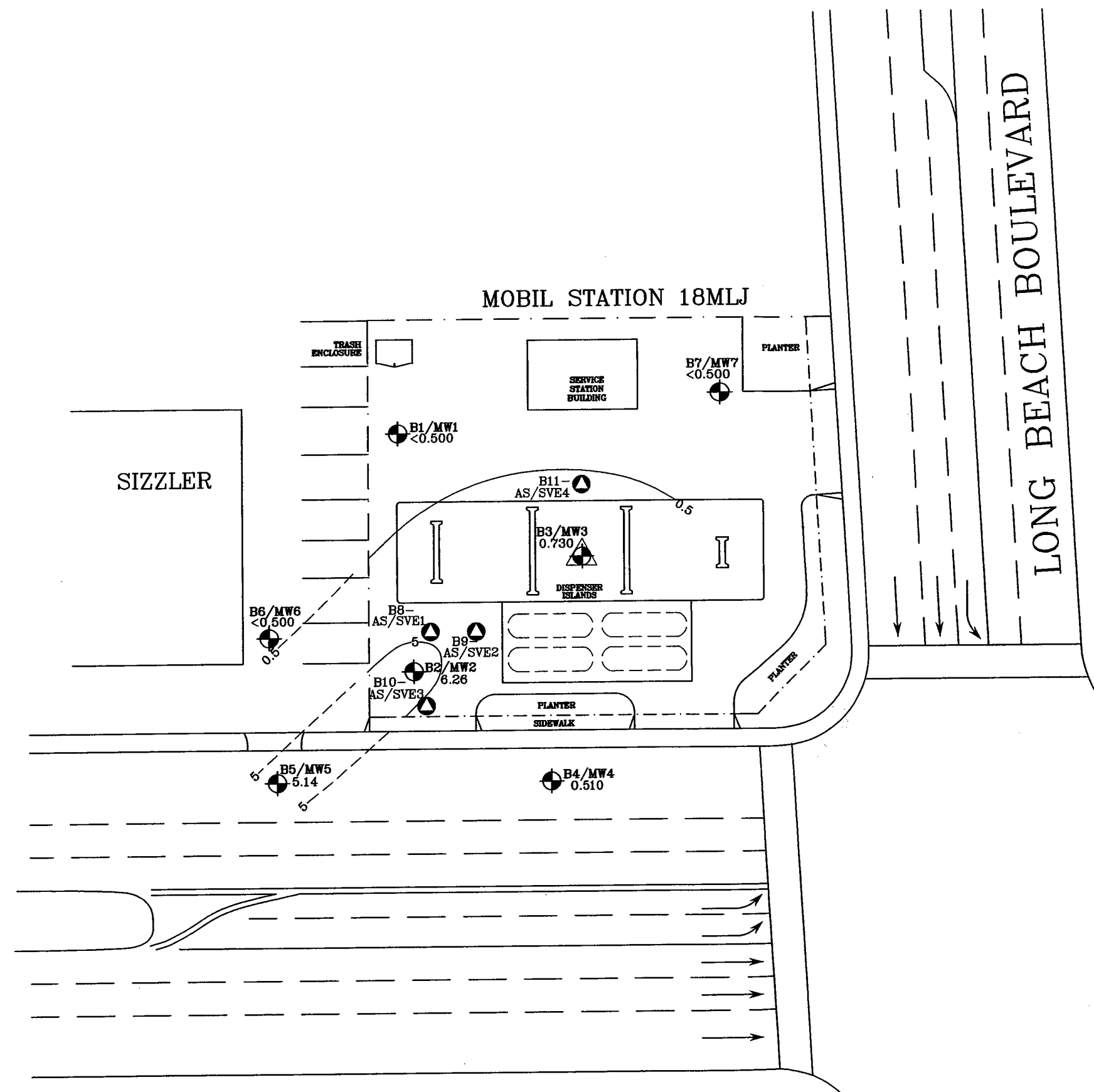
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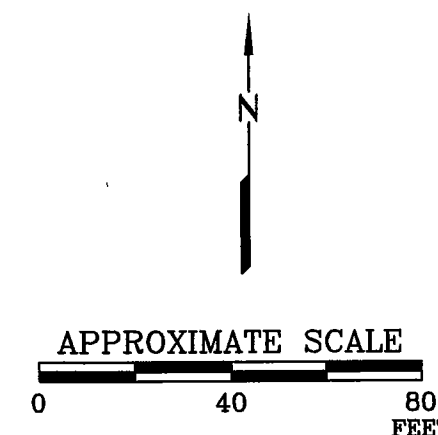
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DATE: 10/12/05



EXPLANATION

- B7/MW7 Groundwater monitoring well
- B3/MW3 Groundwater monitoring/vadose zone well
- B11-AS/SVE4 Air sparge/soil vapor extraction well
- 6.26 Benzene concentration in micrograms per liter
- <0.500 Less than the stated laboratory reporting limit
- Line of equal benzene concentration (dashed where inferred)
- Underground storage tank



BENZENE GROUNDWATER ISOPLETH CONCENTRATION MAP 08/04/05

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

FN 31630004



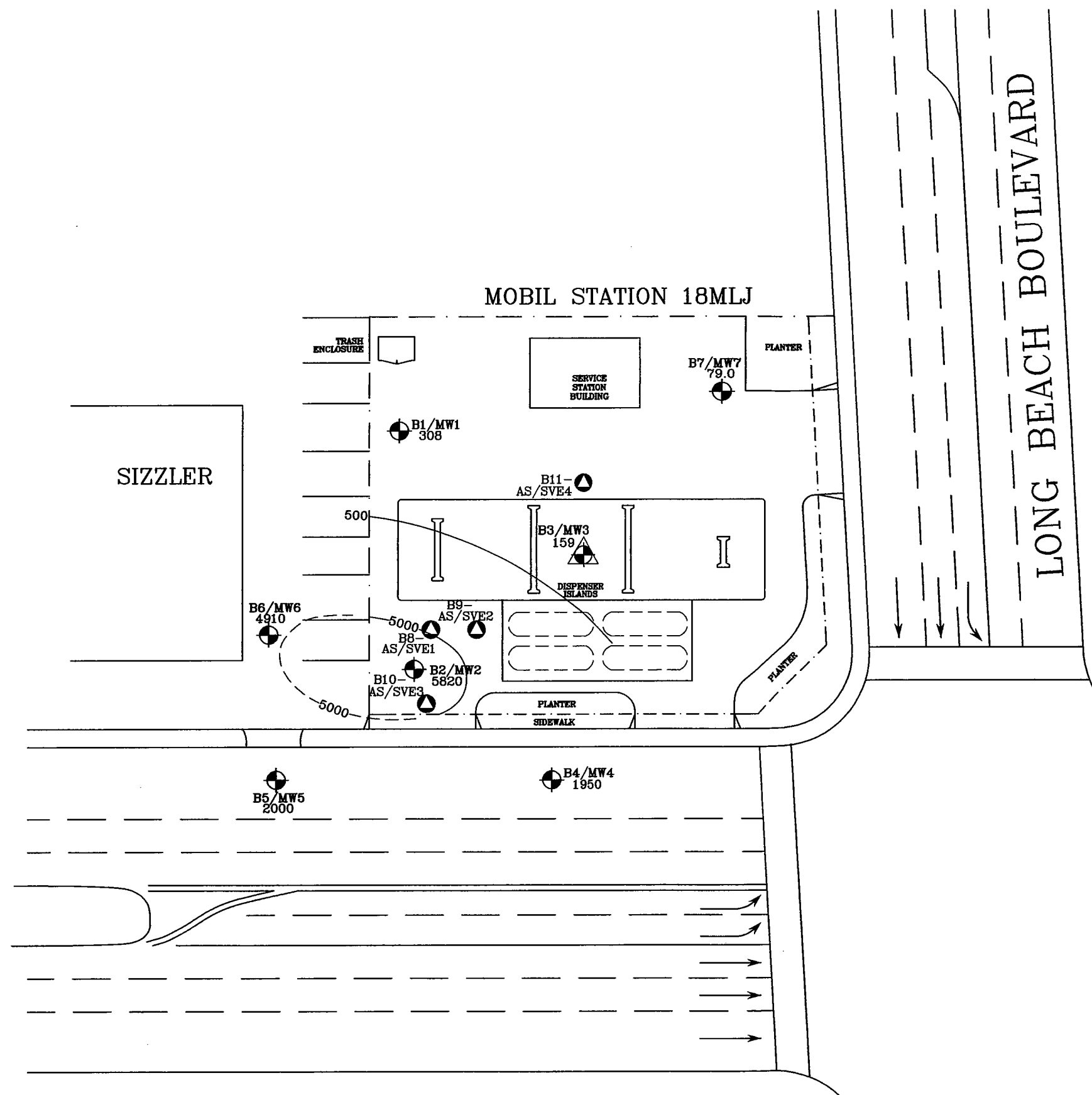
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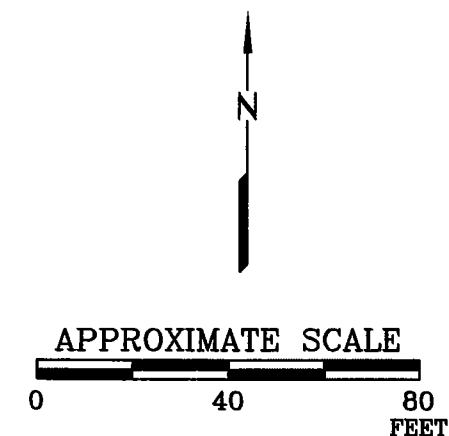
5

DATE: 10/12/05



EXPLANATION

- B7/MW7 Groundwater monitoring well
- B3/MW3 Groundwater monitoring/vadose zone well
- B11-AS/SVE4 Air sparge/soil vapor extraction well
- 5820 TPHg concentration in micrograms per liter
- Line of equal TPHg concentration (dashed where inferred)
- Underground storage tank



TPHg GROUNDWATER ISOPLETH CONCENTRATION MAP 08/04/05

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

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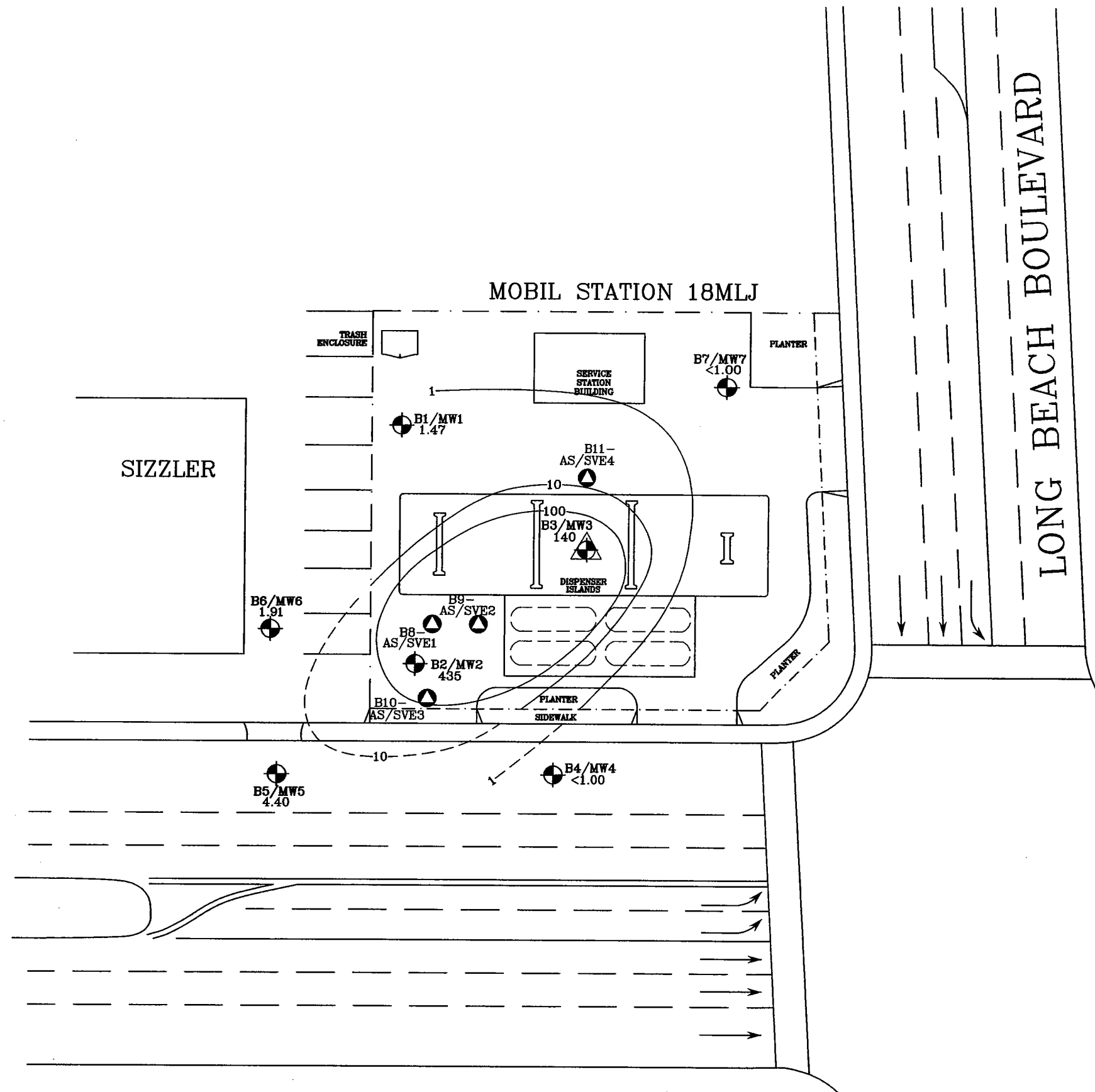
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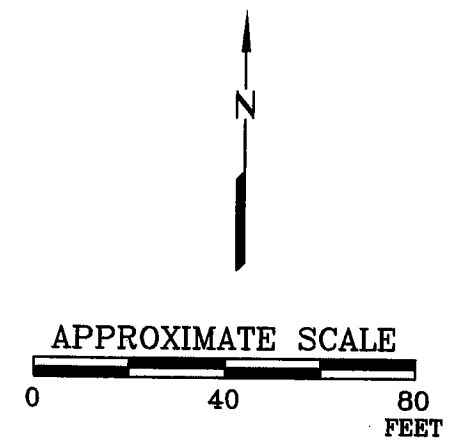
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DATE: 10/12/05



EXPLANATION

- B7/MW7 Groundwater monitoring well
- B3/MW3 Groundwater monitoring/vadose zone well
- B11-AS/SVE4 Air sparge/soil vapor extraction well
- 435 MTBE concentration in micrograms per liter
- <1.00 Less than the stated laboratory reporting limit
- Line of equal MTBE concentration (dashed where inferred)
- Underground storage tank



MTBE GROUNDWATER ISOPLETH CONCENTRATION MAP 08/04/05

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

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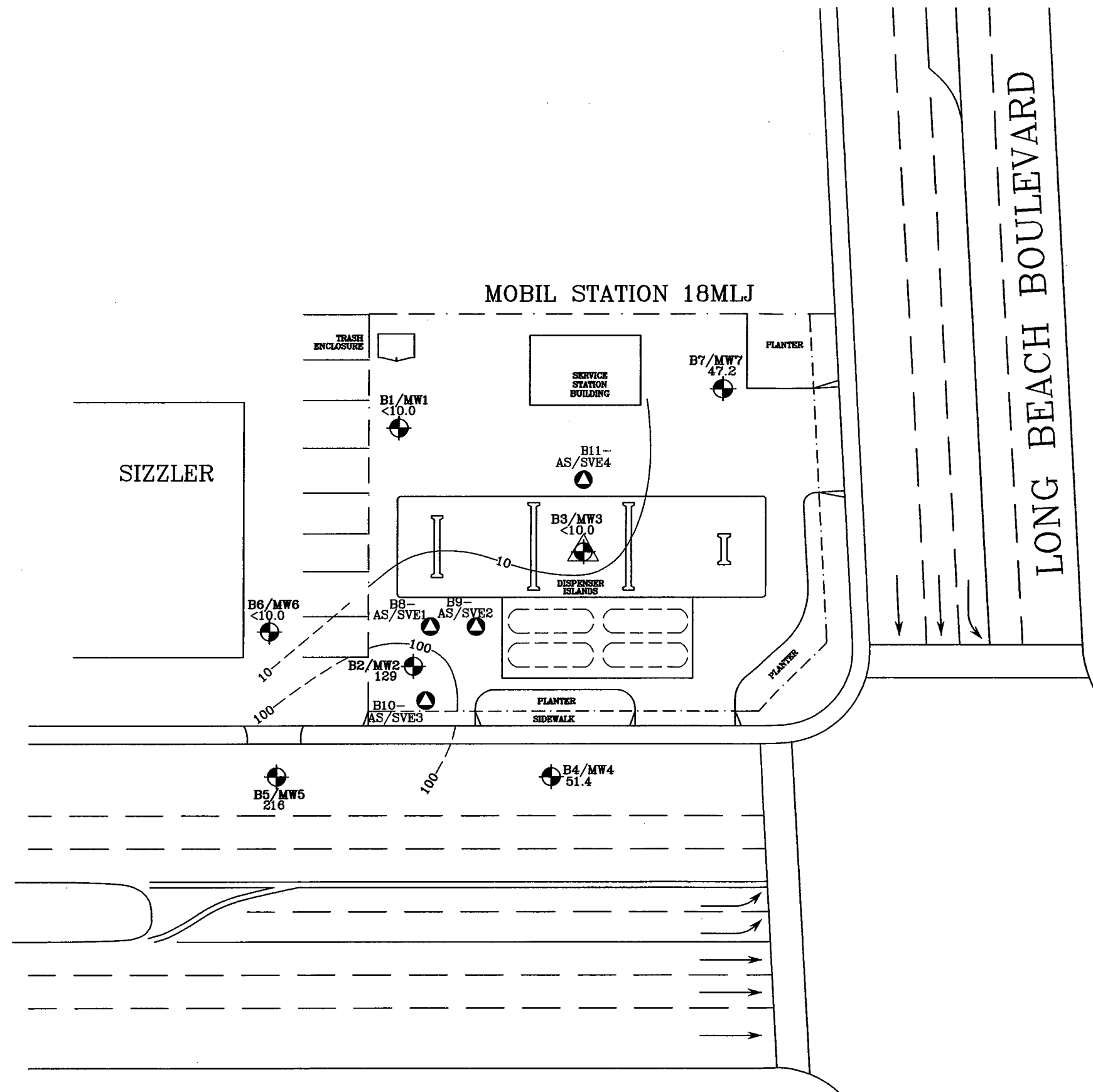
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PLATE

7

DATE: 10/12/05



EXPLANATION

- B7/MW7 Groundwater monitoring well
- B3/MW3 Groundwater monitoring/vadose zone well
- B11-AS/SVE4 Air sparge/soil vapor extraction well
- 216 TBA concentration in micrograms per liter
- <10.0 Less than the stated laboratory reporting limit
- Line of equal TBA concentration (dashed where inferred)
- Underground storage tank

TBA GROUNDWATER ISOPLETH CONCENTRATION MAP 08/04/05

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California

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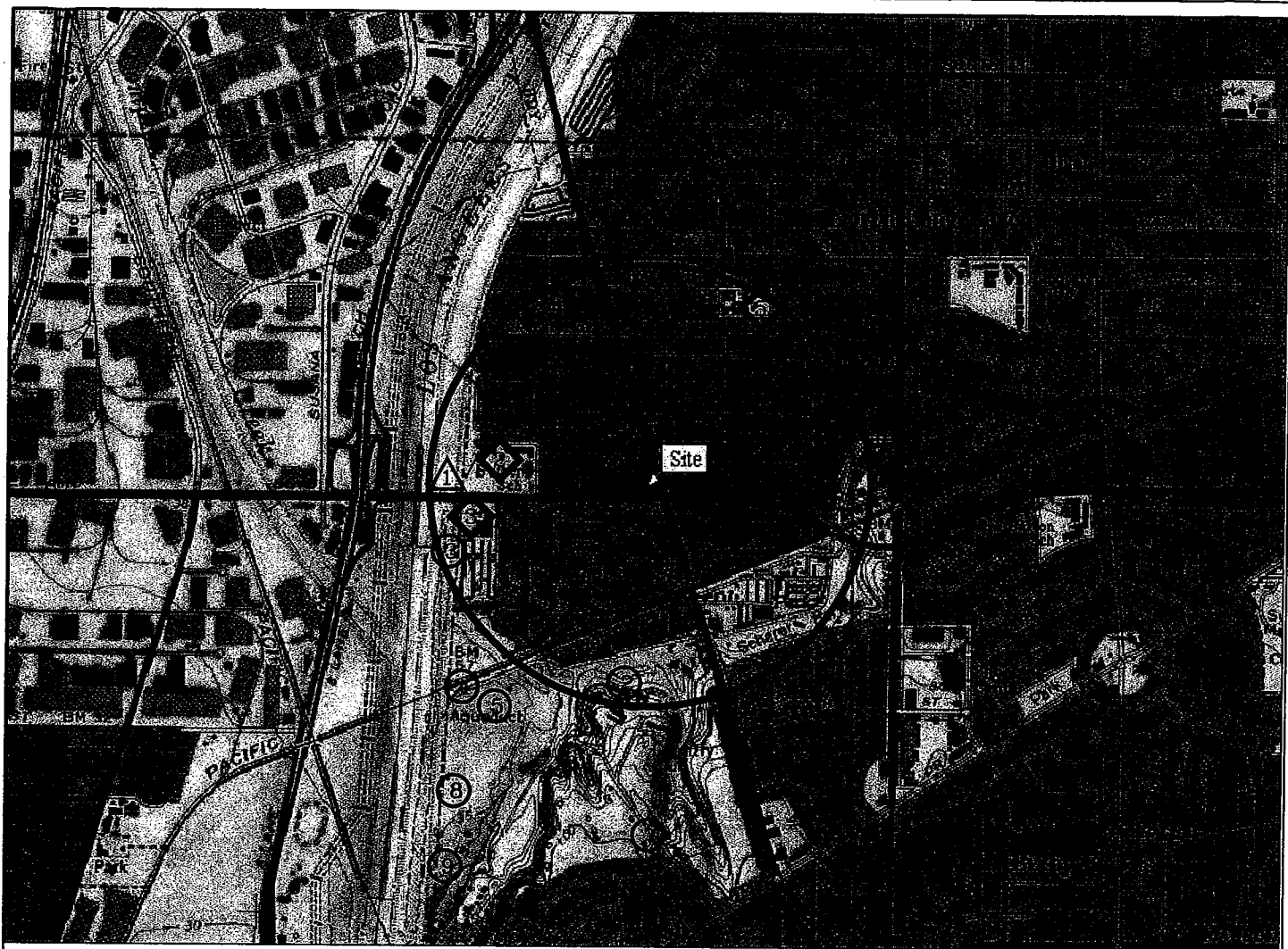
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PLATE

8

DATE: 10/12/05



TN* / MIN
13 1/2°

0 1000 FEET 0 500 1000 METERS

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SENSITIVE RECEPTORS

WATER WELLS

- ① 905L (2170 feet)*
- ② 906B (2270 feet)*
- ③ 895J (2400 feet)*
- ④ 906A (2800 feet)*
- ⑤ 906E (2850 feet)*
- ⑥ 904 (3200 feet)*
- ⑦ 906D (3910 feet)*
- ⑧ 896X (4200 feet)*
- ⑨ 896E (4860 feet)*

SCHOOLS

- ① Praise Temple Academy (630 feet)
- ② Sutter Elementary School (1580 feet)
- ③ Long Beach Adventist School (2010 feet)
- ④ Southwestern Longview School (2270 feet)
- ⑤ Addams Elementary School (2320 feet)

HOSPITALS

None

SURFACE WATER

- ① Los Angeles River (2400 feet)

EXPLANATION

○ 1/2-mile radius circle

* = Location obtained from www.ladpw.org

School locations obtained from Microsoft Streets and Trips 2003 database.

NOTES

Only schools within 1/2-mile radius of site are shown

Map Name: Long Beach, CA
Version: 1981

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PLATE

9

DATE: 10/12/05

SENSITIVE RECEPTOR MAP

MOBIL STATION 18MLJ
5005 North Long Beach Boulevard
Long Beach, California



TABLE 1
CUMULATIVE SOIL ANALYTICAL RESULTS
MOBIL STATION 18MLJ
5005 NORTH LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA
ERI 3163

Sample Number	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd	MTBE	TBA	DIPE	ETBE	TAME	Ethanol	Methanol
Samples collected by FREY Environmental, Inc. on January 18 and 29, 2001. Concentrations reported in mg/kg.														
D1-4	4	<0.092	<0.092	<0.092	<0.272	1.1	NA	5.000	2.600 J	<0.092	<0.092	<0.092	NA	NA
D2-4	4	<0.110	<0.110	<0.110	<0.330	1.9	NA	5.500	21.000	<0.110	<0.110	<0.110	NA	NA
D3-4	4	<0.100	<0.100	<0.100	<0.310	34	NA	30.000	140	<0.100	<0.100	0.055 J	NA	NA
D4-4	4	<0.096	<0.096	<0.096	<0.286	0.82	NA	4.800	8.900	<0.096	<0.096	<0.096	NA	NA
D5-4	4	<0.94	<0.94	<0.94	<0.284	53	NA	50.000	69.000	<0.94	<0.94	<0.94	NA	NA
D6-4	4	<0.390	0.270 J	<0.390	0.210 J	1.8	NA	18.000	<19.000	<0.390	<0.390	<0.390	NA	NA
P1-4	4	<0.930	<0.930	<0.930	<2.830	2.1	NA	13.000	<46.000	<0.930	<0.930	<0.930	NA	NA
SP1		<0.0050	<0.0050	<0.0050	<0.010	<0.50	NA	0.017	4.000	<0.010	<0.010	<0.010	NA	NA
SP2		<0.0050	0.0062	0.010	0.177	3.8	NA	0.011	0.610	<0.010	<0.010	<0.010	NA	NA
SP3		<0.0050	<0.0050	<0.0050	<0.0100	<0.50	NA	<0.0050	0.900	<0.010	<0.010	<0.010	NA	NA
SP4		<0.0050	<0.0050	<0.0050	<0.0100	<0.50	NA	0.049	1.700	<0.010	<0.010	<0.010	NA	NA
SP5		<0.0050	<0.0050	<0.0050	0.054	<0.50	NA	0.039	3.500	<0.010	<0.010	<0.010	NA	NA
SP6 (a)		<0.0050	<0.0050	<0.0050	<0.0100	<0.50	NA	<0.0050	0.510	<0.010	<0.010	<0.010	NA	NA
SP7 (a)		<0.0050	<0.0050	<0.0050	<0.0100	<0.50	NA	<0.0050	<0.250	<0.010	<0.010	<0.010	NA	NA
Samples collected by Environmental Resolutions, Inc. on April 14 and 15, 2003. BTEX and fuel oxygenate concentrations reported in µg/kg; TPHg, ethanol and methanol reported in mg/kg.														
S-6-B1	6	0.78 J	0.71 J	<0.98	0.49 J	<0.27	NA	0.28 J	<20	<0.98	<0.98	<0.98	<0.10	<0.10
S-10-B1	10	11	11	1.7	2.57 J	<0.23	NA	<1.9	<19	<0.95	<0.95	<0.95	<0.10	<0.10
S-15-B1	15	0.46 J	<0.89	<0.89	<2.69	<0.25	NA	0.54 J	<18	<0.89	<0.89	<0.89	<0.10	<0.10
S-20-B1	20	<0.84	<0.84	<0.84	<2.54	<0.21	NA	<1.7	<17	<0.84	<0.84	<0.84	<0.10	<0.10
S-25-B1	25	<1.0	<1.0	<1.0	<3.1	<0.24	NA	<2.1	<21	<1.0	<1.0	<1.0	<0.10	<0.10
S-30-B1	30	<0.97	<0.97	<0.97	<2.87	0.12 J	NA	0.28 J	<19	<0.97	<0.97	<0.97	<0.10	<0.10
S-40-B1	40	0.72 J	0.53 J	<0.91	<2.71	0.26	NA	<1.8	<18	<0.91	<0.91	<0.91	<0.10	<0.10
S-50-B1	50	<1.1	<1.1	<1.1	<3.2	0.13 J	NA	<2.1	<21	<1.1	<1.1	<1.1	<0.10	<0.10

TABLE 1
CUMULATIVE SOIL ANALYTICAL RESULTS
MOBIL STATION 18MLJ
5005 NORTH LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA
ERI 3163

Sample Number	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd	MTBE	TBA	DIPE	ETBE	TAME	Ethanol	Methanol
Samples collected by Environmental Resolutions, Inc. on April 14 and 15, 2003 (continued). BTEX and fuel oxygenate concentrations reported in µg/kg; TPHg, ethanol and methanol reported in mg/kg.														
S-5-B2	5	<98	<98	<98	<298	<0.24	NA	1300	<2000	<98	<98	<98	<0.10	<0.10
S-10-B2	10	<88	<88	<88	<268	<0.23	NA	2600	<1800	<88	<88	<88	<0.10	<0.10
S-15-B2	15	<88	<88	<88	<268	0.070 J	NA	1000	<1800	<88	<88	<88	<0.10	<0.10
S-20-B2	20	3.1	<0.87	11	3.85	0.15 J	NA	36	13 J	<0.87	<0.87	<0.87	<0.10	<0.10
S-25-B2	25	1.0	<0.98	6.4	<2.98	0.17 J	NA	700	220	<0.98	<0.98	<0.98	<0.10	<0.10
S-30-B2	30	<98	<98	<98	<298	0.13 J	NA	1300	<2000	<98	<98	<98	<0.10	<0.10
S-35-B2	35	<1.0	0.42 J	<1.0	0.27 J	0.083 J	NA	1.8 J	<20	<1.0	<1.0	<1.0	<0.10	<0.10
S-40-B2	40	0.16 J	0.38 J	4.9	1.61 J	0.15 J	NA	1.3 J	<20	<0.99	<0.99	<0.99	<0.10	<0.10
S-45-B2	45	<95	2100	620	3600	83	NA	39 J	<1900	<95	<95	<95	<0.10	<0.10
S-50-B2	50	<370	45000	16000	92000	1300	NA	<740	<7400	<370	<370	<370	<0.10	<0.10
S-10-B3	10	<190	<190	<190	212 J	0.68	NA	21000	<3700	<190	<190	<190	<0.10	<0.10
S-15-B3	15	37 J	220	1000	8600	4.4	NA	6700	<1800	<90	<90	<90	<0.10	<0.10
S-20-B3	20	2.7	0.35 J	90	140.95	2.4	NA	720	23	<0.82	<0.82	<0.82	<0.10	<0.10
S-25-B3	25	0.60 J	0.45 J	6.3	20.1	0.12 J	NA	270	56	<0.92	<0.92	<0.92	<0.10	<0.10
S-30-B3	30	<0.97	<0.97	0.35 J	1.63 J	0.22	NA	5.9	<19	<0.97	<0.97	<0.97	<0.10	<0.10
S-35-B3	35	<110	<107	78 J	500	1.1	NA	1300	<2100	<110	<110	<110	NA	NA
S-45-B3	45	0.48 J	2.0	12	85	0.79	NA	150 J	45	<0.89	<0.89	<0.89	<0.10	<0.10
S-50-B3	50	0.35 J	1.5	10	71	0.46	NA	300	58	<0.87	<0.87	<0.87	<0.10	<0.10
Samples collected by Environmental Resolutions, Inc. on October 26 through 28, 2004. Concentrations reported in mg/kg.														
S-10-B4	10	0.0044	0.0039	<0.0013	<0.0013	<5.00	<10.1	<0.0013	<0.0321	<0.0013	<0.0013	<0.0013	<0.128	<10.0
S-15-B4	15	<0.0015	<0.0015	<0.0015	<0.0015	<5.00	<9.96	<0.0015	<0.0378	<0.0015	<0.0015	<0.0015	<0.151	<10.0
S-20-B4	20	<0.0011	<0.0011	<0.0011	<0.0011	<5.00	<10.1	<0.0011	<0.0274	<0.0011	<0.0011	<0.0011	<0.109	<10.0
S-25-B4	25	<0.0019	<0.0019	<0.0019	<0.0019	<5.00	<9.88	<0.0019	<0.0468	<0.0019	<0.0019	<0.0019	<0.187	29.8
S-30-B4	30	<0.0014	<0.0014	<0.0014	<0.0014	<5.00	<10.1	<0.0014	<0.0358	<0.0014	<0.0014	<0.0014	<0.143	25.1
S-35-B4	35	<0.0013	<0.0013	<0.0013	<0.0013	<5.00	<10.1	<0.0013	<0.0319	<0.0013	<0.0013	<0.0013	<0.128	<10.0
S-40-B4	40	<0.0012	<0.0012	<0.0012	<0.0012	<5.00	<10.0	<0.0012	<0.0303	<0.0012	<0.0012	<0.0012	<0.121	51.3
S-45-B4	45	<0.0014	<0.0014	<0.0014	<0.0014	<5.00	<9.88	<0.0014	<0.0356	<0.0014	<0.0014	<0.0014	<0.142	<10.0
S-50-B4	50	<0.0010	<0.0010	<0.0010	<0.0010	<5.00	<10.0	<0.0010	<0.0256	<0.0010	<0.0010	<0.0010	<0.102	<10.0
S-10-B5	10	0.0035	0.0027	0.0031	0.0148	<5.00	<10.1	<0.0013	<0.0333	<0.0013	<0.0013	<0.0013	<0.133	<10.0
S-15-B5	15	<0.0013	<0.0013	<0.0013	<0.0013	<5.00	<10.0	<0.0013	<0.0325	<0.0013	<0.0013	<0.0013	<0.130	<10.0
S-20-B5	20	0.0018	<0.0016	<0.0016	0.0026	<5.00	<9.88	<0.0016	<0.0399	<0.0016	<0.0016	<0.0016	<0.159	<10.0
S-25-B5	25	<0.0023	<0.0023	<0.0023	<0.0023	<5.00	<10.0	<0.0023	<0.0576	<0.0023	<0.0023	<0.0023	<0.230	199
S-30-B5	30	<0.0012	<0.0012	<0.0012	<0.0012	<5.00	<9.88	<0.0012	<0.0292	<0.0012	<0.0012	<0.0012	<0.117	17.3
S-35-B5	35	<0.0012	<0.0012	<0.0012	<0.0012	<5.00	<10.1	<0.0012	<0.0302	<0.0012	<0.0012	<0.0012	<0.121	<10.0

TABLE 1
CUMULATIVE SOIL ANALYTICAL RESULTS
MOBIL STATION 18MLJ
5005 NORTH LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA
ERI 3163

Sample Number	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd	MTBE	TBA	DIPE	ETBE	TAME	Ethanol	Methanol
Samples collected by Environmental Resolutions, Inc. on October 26 through 28, 2004 (continued). Concentrations reported in mg/kg.														
S-45-B5	45	<0.0016	0.0028	0.0073	0.0103	<5.00	<10.0	<0.0016	<0.0394	<0.0016	<0.0016	<0.0016	<0.158	57.0
S-50-B5	50	<0.0011	0.0131	0.0349	0.0558	<5.00	<9.92	<0.0011	<0.0278	<0.0011	<0.0011	<0.0011	<0.111	<10.0
S-10-B6	10	0.0058	0.0048	<0.0016	<0.0016	<5.00	<10.0	<0.0016	<0.0388	<0.0016	<0.0016	<0.0016	<0.155	<10.0
S-15-B6	15	<0.0015	<0.0015	<0.0015	<0.0015	<5.00	<9.80	<0.0015	<0.0382	<0.0015	<0.0015	<0.0015	<0.153	<10.0
S-20-B6	20	<0.0014	<0.0014	<0.0014	<0.0014	<5.00	<10.1	<0.0014	<0.0362	<0.0014	<0.0014	<0.0014	<0.145	<10.0
S-25-B6	25	<0.0014	<0.0014	<0.0014	<0.0014	<5.00	<10.1	<0.0014	<0.0344	<0.0014	<0.0014	<0.0014	<0.138	49.8
S-30-B6	30	<0.0013	<0.0013	<0.0013	<0.0013	<5.00	<10.1	<0.0013	<0.0334	<0.0013	<0.0013	<0.0013	<0.134	<10.0
S-35-B6	35	0.0023	0.0015	<0.0014	<0.0014	<5.00	<10.0	<0.0014	<0.0353	<0.0014	<0.0014	<0.0014	<0.141	<10.0
S-40-B6	40	<0.0012	<0.0012	<0.0012	<0.0012	<5.00	<10.1	<0.0012	<0.0312	<0.0012	<0.0012	<0.0012	<0.125	<10.0
S-45-B6	45	<0.0013	<0.0013	0.112	0.0608	<5.00	<10.1	<0.0013	<0.0318	<0.0013	<0.0013	<0.0013	<0.127	<10.0
S-50-B6	50	<0.0013	<0.0013	0.0930	0.0486	<5.00	<9.92	<0.0013	<0.0325	<0.0013	<0.0013	<0.0013	<0.130	<10.0
Samples collected by Environmental Resolutions, Inc. on March 16, 2005. Concentrations reported in mg/kg.														
S-10-B7	10	0.0063	0.0035	0.0026	0.0113	<4.87 J	67.7	<0.0017	<0.0427	<0.0017	<0.0017	<0.0017	<0.171	<5.00
S-15-B7	15	0.0009 J	<0.0016	<0.0016	<0.0016	<4.76	<1.00 J	<0.0016	<0.0394	<0.0016	<0.0016	<0.0016	<0.158	<5.00
S-20-B7	20	0.0025	0.0075	0.0097	0.0567	<4.74	<1.01 J	<0.0015	<0.0369	<0.0015	<0.0015	<0.0015	<0.147	<5.00
S-25-B7	25	<0.0017	<0.0017	<0.0017	<0.0017	<5.01	<1.00 J	<0.0017	<0.0427	<0.0017	<0.0017	<0.0017	<0.171	<5.00
S-30-B7	30	0.0025	<0.0016	0.0011 J	0.0049	<4.87	6.37	<0.0016	<0.0408	<0.0016	<0.0016	<0.0016	<0.163	<5.00
S-35-B7	35	0.0013 J	<0.0018	0.0025	0.0154	<4.86	<1.01 J	<0.0018	<0.0450	<0.0018	<0.0018	<0.0018	<0.180	<5.00
S-40-B7	40	<0.0019	<0.0019	<0.0019	<0.0019	<4.94	<1.01 J	<0.0019	<0.0465	<0.0019	<0.0019	<0.0019	<0.186	<5.00
S-45-B7	45	<0.0018	<0.0018	<0.0018	0.0012 J	<4.97	<1.01 J	<0.0018	<0.0456	<0.0018	<0.0018	<0.0018	<0.182	<5.00
S-50-B7	50	<0.0017	<0.0017	<0.0017	<0.0017	<4.80	<1.00 J	<0.0017	<0.0420	<0.0017	<0.0017	<0.0017	<0.168	<5.00
Samples collected by Environmental Resolutions, Inc. on May 31, June 1 and 2, 2005. Concentrations reported in µg/kg.														
S-5-B8	5	3.5	1.6 J	<2.7	<2.7	360 J	670 J	885	1070	<2.7	<2.7	<2.7	<270	NA
S-10-B8	10	7.3	5.8	1.2 J	1.6 J	11100	740 J	1.1 J	8540	<1.8	<1.8	<1.8	<177	NA
S-15-B8	15	1.3 J	1.3 J	0.9 J	1.2 J	700 J	920 J	2.0	7900	<1.7	<1.7	<1.7	<167	NA
S-20-B8	20	1.1 J	<1.5	53.4	1.5	1890	620 J	15.8	3140	<1.5	<1.5	<1.5	<152	NA
S-25-B8	25	16.0	3.5	15.3	26.2	400 J	780 J	224	545	<1.8	<1.8	<1.8	<180	NA
S-30-B8	30	1.4 J	1.6 J	271	45.9	1210	640 J	7.2	<43.7	<1.7	<1.7	<1.7	<175	NA
S-35-B8	35	<1.6	<1.6	1.0 J	<1.6	<1000	560 J	<1.6	<40.8	<1.6	<1.6	<1.6	<163	NA
S-40-B8	40	0.7 J	46.1	643	1270	12900	106000	<1.8	<46.0	<1.8	<1.8	<1.8	<184	NA
S-5-B9	5	8.6	451	260	1210	<1000	760 J	799	<46.5	<1.9	<1.9	<1.9	<186	NA
S-10-B9	10	3.0	4.4	2.0	7.5	6380	720 J	9400	1150	<1.7	<1.7	4.8	<171	NA
S-15-B9	15	91.8	2320	3520	22700	180000	2590	12800	<41.0	<1.6	<1.6	<1.6	<164	NA
S-20-B9	20	831	74400	47600	275000	539000	5790	31700	11400	<78.7	<78.7	<78.7	<7870	NA
S-25-B9	25	34.3	445	140	705	1800000	43400	6850	625	<1.4	<1.4	<1.4	<137	NA
S-30-B9	30	<1.6 J	17.4	1800	105	316000	13800	11.5	<41.7	<1.7	<1.7	<1.7	<167	NA
S-35-B9	35	7.3	1330	1020	5770	9570	2240	1050	363	<1.8	<1.8	<1.8	<180	NA
S-40-B9	40	<86.2	47.4 J	77.6 J	172	1060000	129000	64.7 J	<2160	<86.2	<86.2	<86.2	<8620	NA

TABLE 1
CUMULATIVE SOIL ANALYTICAL RESULTS
MOBIL STATION 18MLJ
5005 NORTH LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA
ERI 3163

Sample Number	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd	MTBE	TBA	DIPE	ETBE	TAME	Ethanol	Methanol
Samples collected by Environmental Resolutions, Inc. on May 31, June 1 and 2, 2005 (continued). Concentrations reported in ug/kg.														
S-5-B10	5	5.9	5.9	0.9 J	<2.1	<100	1060	33.2	43.7 J	<2.1	<2.1	<2.1	<211	NA
S-10-B10	10	3.5	3.1	<2.0	<2.0	100	750 J	32.5	152	<2.0	<2.0	<2.0	<196	NA
S-15-B10	15	1.8 J	1.9	<1.9	<1.9	400	2770	552	716	<1.9	<1.9	<1.9	<187	NA
S-20-B10	20	1.8	2.4	2.6	11.1	<100	4640	253	58.4	<1.5	<1.5	<1.5	<154	NA
S-25-B10	25	6.1	13.8	95.1	165	<100	760 J	194	<69.4	<2.8	<2.8	<2.8	<278	NA
S-30-B10	30	0.8 J	1.7 J	1.2 J	3.6	<100	920 J	20.7	21.2 J	<1.8	<1.8	<1.8	<175	NA
S-35-B10	35	1.2 J	1.2 J	1.3 J	<1.7	<100	440 J	8.9	<43.0	<1.7	<1.7	<1.7	<172	NA
S-40-B10	40	1.3 J	1.5 J	3.4	6.8	110	1130	29.6	<46.5	<1.9	<1.9	<1.9	<186	NA
S-10-B11	10	7.3	5.8	<1.6	10.3	<1000	NA	666	51.6	<1.6	<1.6	<1.6	<164	NA
S-15-B11	15	<1.7	<1.7	<1.7	25.1	<1000	NA	168	<42.1	<1.7	<1.7	<1.7	<168	NA
S-20-B11	20	<1.5	<1.5	<1.5	2.9	<1000	NA	27.4	<38.3	<1.5	<1.5	<1.5	<153	NA
S-25-B11	25	<1.8	<1.8	<1.8	<1.8	<1000	NA	15.4	<43.9	<1.8	<1.8	<1.8	<175	NA
S-30-B11	30	<1.7	<1.7	<1.7	<1.7	<1000	NA	<1.7	<43.4	<1.7	<1.7	<1.7	<174	NA
S-35-B11	35	<2.0	<2.0	<2.0	<2.0	<1000	NA	<2.0	<49.2	<2.0	<2.0	<2.0	<197	NA
S-40-B11	40	<2.0	<2.0	<2.0	<2.0	<1000	NA	<2.0	<49.3	<2.0	<2.0	<2.0	<197	NA

EXPLANATION:

mg/kg = milligrams per kilogram;

µg/kg = micrograms per kilogram

BTEX = benzene, toluene, ethylbenzene and total xylenes

DIPE = di-isopropyl ether

ETBE = ethyl tertiary butyl ether

MTBE = methyl tertiary butyl ether analyzed by Environmental Protection Agency Method 8260B

TAME = tertiary amyl methyl ether

TBA = tertiary butyl alcohol

TPHd = total petroleum hydrocarbons as diesel

TPHg = total petroleum hydrocarbons as gasoline

(a) = samples analyzed for total lead; results were: SP6, 8.27 mg/kg; SP7, 13.2 mg/kg

D = dispenser island; P = product line; SP = stockpile

J = estimated value between method detection limit and practical quantitation limit

NA = not analyzed

<8620 = not detected at or above stated laboratory reporting limit

TABLE 2
WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES
MOBIL STATION 18MLJ
5005 NORTH LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA
ERI 3163

MW1	ELEV:	41.10							
DATE	GW DEPTH	GW ELEV.	B	T	E	X	TPHg	MTBE	TBA
08/04/05	27.92	13.18	<0.500	<0.500	<0.500	<0.500	308	1.47	<10.0
MW2	ELEV:	39.55							
DATE	GW DEPTH	GW ELEV.							
08/04/05	26.62	12.93	6.26	181	855	307	5820	435	129
MW3	ELEV:	40.84							
DATE	GW DEPTH	GW ELEV.							
08/04/05	27.61	13.23	0.730	<0.500	1.06	<0.500	159	140	<10.0
MW4	ELEV:	39.10							
DATE	GW DEPTH	GW ELEV.							
08/04/05	26.21	12.89	0.510	<0.500	<0.500	<0.500	1950	<1.00	51.4
MW5	ELEV:	38.72							
DATE	GW DEPTH	GW ELEV.							
08/04/05	26.08	12.64	5.14	54.9	140	229	2000	4.40	216
MW6	ELEV:	39.21							
DATE	GW DEPTH	GW ELEV.							
08/04/05	26.44	12.77	<0.500	1.94	685	94.3	4910	1.91	<10.0
MW7	ELEV:	41.14							
DATE	GW DEPTH	GW ELEV.							
08/04/05	27.79	13.35	<0.500	<0.500	<0.500	<0.500	79.0	<1.00	47.2

EXPLANATION:

Results in micrograms per liter (ug/l).

GW = groundwater; ELEV = elevation

B = benzene; T = toluene; E = ethylbenzene; X = total xylene isomers; TPHg = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary butyl ether analyzed by EPA Method 8260B

TBA = tertiary butyl alcohol

<10.0 = not detected at or above stated laboratory reporting limit

TABLE 3
CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES
MOBIL STATION 18MLJ
5005 NORTH LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA
ERI 3163

Date	Well Elev	GW Depth	GW Elev	LPH	Benzene (ug/l)	Toluene (ug/l)	Ethyl- benzene (ug/l)	Xylenes (ug/l)	TPHg (ug/l)	TPHd (ug/l)	TRPH (ug/l)	MTBE (ug/l)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	Ethanol (ug/l)	Methanol (ug/l)
Field Point MW1																		
4/17/2003	41.10	29.66	11.44	no	<1.00	<1.00	<1.00	<1.00	230	133	<100	<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
8/26/2003	41.10	29.52	11.58	no	<1.00	<1.00	<1.00	<1.00	97.4	<500		<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
11/14/2003	41.10	29.88	11.22	no	<1.00	<1.00	<1.00	<1.00	<50.0	<500		<2.00	<1.00	<1.00	<1.00	<10.0		
2/21/2004	41.10	30.03	11.07	no	<1.00	<1.00	<1.00	<1.00	<50.0	<500		<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
4/30/2004	41.10	29.85	11.25	no	<1.00	<1.00	<1.00	<1.00	<50.0	<500		<2.00	<1.00	<1.00	<1.00	69.0		
7/10/2004	41.10	30.50	10.60	no	<1.00	<1.00	<1.00	<1.00	231	<500		2.90	<1.00	<1.00	<1.00	<10.0		
11/5/2004	41.10	30.52	10.58	no	<1.00	<1.00	<1.00	<1.00	<50.0	<500		<2.00	<1.00	<1.00	<1.00	<10.0		
3/21/2005	41.10	29.21	11.89	no	0.70	<0.50	0.60	3.40	<50.0	<500		6.10	<1.00	<1.00	1.00	17.0	<200	<5000
6/2/2005	41.10	28.32	12.78	no	<0.50	<0.50	<0.50	<0.50	82.9	<500		1.90	<1.00	<1.00	<1.00	9.20 J		
8/4/2005	41.10	27.92	13.18	no	<0.500	<0.500	<0.500	<0.500	308	<500		1.47	<1.00	<1.00	<1.00	<10.0		
Field Point MW2																		
4/17/2003	39.55	28.43	11.12	no	5.90	3660	1340	3940	19900	2980	<100	131	<1.00	<1.00	<1.00	<10.0	<1000	<10000
8/26/2003	39.55	28.31	11.24	no	118	1220	1260	625	15600	1490		5200	<1.00	<1.00	5.70	85.1	<1000	<10000
11/14/2003	39.55	28.66	10.89	no	68.0	1280	1280	770	9810	1110		4260	<1.00	<1.00	<1.00	142		
2/21/2004	39.55	28.82	10.73	no	47.1	560	1220	775	10600	1710		975	<1.00	<1.00	<1.00	56.5	<1000	<10000
4/30/2004	39.55	28.62	10.93	no	61.0	424	1390	550	9090	872		1040	<1.00	<1.00	<1.00	<10.0		
7/10/2004	39.55	29.34	10.21	no	60.4	348	1260	402	8260	1220		920	<1.00	<1.00	<1.00	125		
11/5/2004	39.55	29.31	10.24	no	66.7	238	930	190	6360	878		220	<1.00	<1.00	<1.00	<10.0		
3/21/2005	39.55	27.96	11.59	no	80.7	125	538	90.1	2670	<500		1370	<1.00	0.60 J	0.70 J	522	<200	<5000

TABLE 3
CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES
MÖBIL STATION 18MLJ
5005 NORTH LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA
ERI 3163

Date	Well Elev	GW Depth	GW Elev	LPH	Benzene (ug/l)	Toluene (ug/l)	Ethyl- benzene (ug/l)	Xylenes (ug/l)	TPHg (ug/l)	TPHd (ug/l)	TRPH (ug/l)	MTBE (ug/l)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	Ethanol (ug/l)	Methanol (ug/l)
6/2/2005	39.55	27.02	12.53	no	307	124	1630	277	16000	510		6780	<1.00	<1.00	<1.00	3550		
8/4/2005	39.55	26.62	12.93	no	6.26	181	855	307	5820	101 J		435	<1.00	<1.00	<1.00	129		
Field Point MW3																		
4/17/2003	40.84	29.34	11.50	no	<1.00	<1.00	1.50	7.70	2530	916	<100	105	<1.00	<1.00	<1.00	45.4	<1000	<10000
8/26/2003	40.84	29.26	11.58	no	<1.00	<1.00	1.60	<1.00	162	<500		112	<1.00	<1.00	<1.00	<10.0	<1000	<10000
11/14/2003	40.84	29.57	11.27	no	<1.00	<1.00	2.40	<1.00	179	<500		87.2	<1.00	<1.00	<1.00	<10.0		
2/21/2004	40.84	29.73	11.11	no	1.20	<1.00	2.30	<1.00	170	<500		116	<1.00	<1.00	<1.00	<10.0	<1000	<10000
4/30/2004	40.84	29.57	11.27	no	<1.00	<1.00	2.00	6.40	138	<500		137	<1.00	<1.00	<1.00	<10.0		
7/10/2004	40.84	30.31	10.53	no	<1.00	<1.00	2.80	<1.00	139	<500		89.6	<1.00	<1.00	<1.00	<10.0		
11/5/2004	40.84	30.25	10.59	no	1.50	<1.00	4.30	<1.00	181	<500		182	<1.00	<1.00	<1.00	50.3		
3/21/2005	40.84	28.88	11.96	no	2.60	<0.50	1.20	1.00	222	<500		120	<1.00	<1.00	<1.00	97.4	<200	<5000
6/2/2005	40.84	28.01	12.83	no	0.80	<0.50	0.50	<0.50	260	<500		167	<1.00	<1.00	<1.00	105		
8/4/2005	40.84	27.61	13.23	no	0.730	<0.500	1.06	<0.500	159	<500		140	<1.00	<1.00	<1.00	<10.0		
Field Point MW4																		
11/5/2004	39.10	30.85	8.25	no	23.7	<1.00	<1.00	<1.00	247	<500		27.1	<1.00	<1.00	<1.00	5760		
3/21/2005	39.10	27.51	11.59	no	35.6	<0.50	0.90	13.8	2060	831		76.6	<1.00	1.20	1.10	49700	<200	1800 J
6/2/2005	39.10	26.62	12.48	no	8.70	<0.50	0.50	<0.50	538	<500		60.9	<1.00	<1.00	<1.00	19300		
8/4/2005	39.10	26.21	12.89	no	0.510	<0.500	<0.500	<0.500	1950	<500		<1.00	<1.00	<1.00	<1.00	51.4		
Field Point MW5																		
11/5/2004	38.72	28.74	9.98	no	<1.00	119	280	900	6520	1330		<2.00	<1.00	<1.00	<1.00	<10.0		
3/21/2005	38.72	27.39	11.33	no	23.1	<0.50	8.10	1.40	1420	560		9.70	<1.00	<1.00	<1.00	5250	<200	<5000

TABLE 3
CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES
MOBIL STATION 18MLJ
5005 NORTH LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA
ERI 3163

<i>Date</i>	<i>Well Elev</i>	<i>GW Depth</i>	<i>GW Elev</i>	<i>LPH</i>	<i>Benzene (ug/l)</i>	<i>Toluene (ug/l)</i>	<i>Ethyl- benzene (ug/l)</i>	<i>Xylenes (ug/l)</i>	<i>TPHg (ug/l)</i>	<i>TPHd (ug/l)</i>	<i>TRPH (ug/l)</i>	<i>MTBE (ug/l)</i>	<i>DIPE (ug/l)</i>	<i>ETBE (ug/l)</i>	<i>TAME (ug/l)</i>	<i>TBA (ug/l)</i>	<i>Ethanol (ug/l)</i>	<i>Methanol (ug/l)</i>
6/2/2005	38.72	26.48	12.24	no	0.90	2.40	1.80	2.90	315	<500		2.00	<1.00	<1.00	<1.00	697		
8/4/2005	38.72	26.08	12.64	no	5.14	54.9	140	229	2000	<500		4.40	<1.00	<1.00	<1.00	216		
Field Point MW6																		
11/5/2004	39.21	29.11	10.10	no	3.50	5.00	1120	404	8090	1580		<2.00	<1.00	<1.00	<1.00	<10.0		
3/21/2005	39.21	27.76	11.45	no	<0.50	<0.50	585	122	3960	749		<1.00	<1.00	<1.00	<1.00	<50.0	<200	1200 J
6/2/2005	39.21	26.85	12.36	no	<0.50	0.40 J	826	116	5330	<500		<1.00	<1.00	<1.00	<1.00	<10.0		
8/4/2005	39.21	26.44	12.77	no	<0.500	1.94	685	94.3	4910	197 J		1.91	<1.00	<1.00	<1.00	<10.0		
Field Point MW7																		
3/21/2005	41.14	29.09	12.05	no	<0.50	<0.50	<0.50	<0.50	<50.0	<500		0.50 J	<1.00	<1.00	<1.00	4.70 J	<200	<5000
6/2/2005	41.14	28.13	13.01	no	<0.50	0.30 J	<0.50	<0.50	<50.0	<500		<1.00	<1.00	<1.00	<1.00	<10.0		
8/4/2005	41.14	27.79	13.35	no	<0.500	<0.500	<0.500	<0.500	79.0	<500		<1.00	<1.00	<1.00	<1.00	47.2		
Field Point Trip Blank																		
4/17/2003				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
8/26/2003				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
11/14/2003				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
2/21/2004				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
4/30/2004				no	<1.00	1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
7/10/2004				no	<1.00	<1.00	<1.00	<1.00	50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
11/5/2004				no	<1.00	<1.00	<1.00	<1.00	<50.0			<2.00	<1.00	<1.00	<1.00	<10.0		
3/21/2005				no	<0.50	<0.50	<0.50	<0.50	<50.0			<1.00	<1.00	<1.00	<1.00	<10.0		
6/2/2005				no	<0.50	<0.50	<0.50	<0.50	<50.0			<1.00	<1.00	<1.00	<1.00	<10.0		

TABLE 3
 CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES
 MOBIL STATION 18MLJ
 5005 NORTH LONG BEACH BOULEVARD
 LONG BEACH, CALIFORNIA
 ERI 3163

<i>Date</i>	<i>Well Elev</i>	<i>GW Depth</i>	<i>GW Elev</i>	<i>LPH</i>	<i>Benzene</i> <i>(ug/l)</i>	<i>Toluene</i> <i>(ug/l)</i>	<i>Ethyl- benzene</i> <i>(ug/l)</i>	<i>Xylenes</i> <i>(ug/l)</i>	<i>TPHg</i> <i>(ug/l)</i>	<i>TPHd</i> <i>(ug/l)</i>	<i>TRPH</i> <i>(ug/l)</i>	<i>MTBE</i> <i>(ug/l)</i>	<i>DIPE</i> <i>(ug/l)</i>	<i>ETBE</i> <i>(ug/l)</i>	<i>TAME</i> <i>(ug/l)</i>	<i>TBA</i> <i>(ug/l)</i>	<i>Ethanol</i> <i>(ug/l)</i>	<i>Methanol</i> <i>(ug/l)</i>
8/4/2005				no	<0.500	<0.500	<0.500	<0.500	<50.0			<1.00	<1.00	<1.00	<1.00	<10.0		

TABLE 3
CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES
MOBIL STATION 18MLJ
5005 NORTH LONG BEACH BOULEVARD
LONG BEACH, CALIFORNIA
ERI 3163

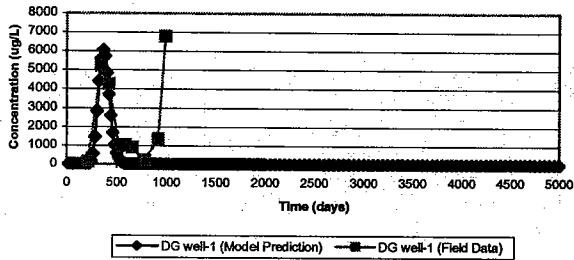
Explanation:
ELEV = elevation
EPA = Environmental Protection Agency
GW = groundwater
DIPE = di-isopropyl ether
ETBE = ethyl tertiary butyl ether
TAME = tertiary amyl methyl ether
TBA = tertiary butyl alcohol
TPHd = total petroleum hydrocarbons as diesel
TPHg = total petroleum hydrocarbons as gasoline
TRPH = total recoverable petroleum hydrocarbons
MTBE = methyl tertiary butyl ether
MTBE analyzed by EPA Method 8260B.
LPH = liquid phase hydrocarbons (thickness measured in feet)
J = estimated value between method detection limit and practical quantification limit
<10000 = not detected at or above stated laboratory reporting limit
ug/l = micrograms per liter

California Regional Water Quality Control Board
Non-Steady State Transport Model
Mobil Station 18JR1
2001 West Alondra Boulevard, Compton, California
CRWQCB - Los Angeles Region Case No. R-09372

ExxoMobil Oil Corporation Station 18MLJ, 5005 N. Long Beach Blvd., Long Beach			Range	Soil Type	Velocity Range
X axis dispersivity	0.25 ft		0.1-10	Gravel	up to 3 ft/d
Y axis dispersivity	0.0825 ft		(0.33-0.65) D	Coarse Sand	up to 1.5 ft/d
Distance parallel to direction of GW flow	20 ft			Clean Sand	up to 1.0 ft/d
Distance perpendicular to direction of GW flow	5 ft			Fine Sand	up to 0.5 ft/d
Groundwater velocity	0.059 ft/day		0.01-3.0	Silty Sand	up to 0.1 ft/d
Source concentration	4.24E+06 ug/L		4.24E+03	Sandy Silt	0.01-0.05 ft/d
Rate of discharge	25 ft ² /yr		mg/L	Silty	0.01 ft/d
Discharge duration or <i>dt</i>	8.33E-02 yr			Soil Type poorly sorted sand	
Mass discharged per unit depth (<i>C₀Qdt</i>)	2.50E+08 ug/ft				
	2.50E+02 g/ft			Date 2nd? Release Disc'd Apr-03	
Distance (<i>X</i> ₂) to DG well 2	100 ft			Date of 1st Monit. Event 4/17/2003	
Distance (<i>Y</i> ₂) perpendicular to direction of flow	2 ft			GW at ~ 28 fbg	
Distance (<i>X</i> ₃) to drinking water well	2170 ft			Silt and sandy silt 0-20 fbg	
Distance (<i>Y</i> ₃) perpendicular to direction of flow	0 ft			Sand 20 fbg - TD	
Maximum concentration in drinking water well	2074.02 ug/L				
Time when plume reached its peak in DW well	37000 days				
Time when plume first reached 5 ug/L in DW well	35000 days				
Time remaining for plume to reach 5 ug/L in DW well	91.3 years				
Well Name	Well No	Distance(x)	Distance(y)	C (ug/L)	Time (days)
Downgradient Well 1 at <i>T</i> ₁	MW2	20	5	131	210
<i>T</i> ₂				5200	341
<i>T</i> ₃				4260	421
<i>T</i> ₄				975	520
<i>T</i> ₅				1040	589
<i>T</i> ₆				920	660
<i>T</i> ₇				220	778
<i>T</i> ₈				1370	914
<i>T</i> ₉				6780	987
<i>T</i> ₁₀					
<i>T</i> ₁₁					
<i>T</i> ₁₂					
<i>T</i> ₁₃					
<i>T</i> ₁₄					
<i>T</i> ₁₅					
Date of Last Record					
Downgradient Well 2 at <i>T</i> ₁	MW5	100	2	2	778
<i>T</i> ₂				9.7	914
<i>T</i> ₃				2	987
<i>T</i> ₄					
<i>T</i> ₅					
<i>T</i> ₆					
<i>T</i> ₇					
<i>T</i> ₈					
<i>T</i> ₉					
<i>T</i> ₁₀					
<i>T</i> ₁₁					
<i>T</i> ₁₂					
<i>T</i> ₁₃					
<i>T</i> ₁₄					
<i>T</i> ₁₅					
Date of Last Record			Date of First Record		

California Regional Water Quality Control Board
Non-Steady State Transport Model
Mobil Station 18JR1
2001 West Alondra Boulevard, Compton, California
CRWQCB - Los Angeles Region Case No. R-09372

Fig. 1 Field Data and Model Predicted Time Vs. MTBE Concentration Profile for Down-Gradient (DG) Well-1



Time (> 5 ug/L) Time (Peak) Max Conc
2074.0238

Fig. 2 Field Data and Model Predicted Time Vs. MTBE Concentration Profile for Down-Gradient (DG) Well-2

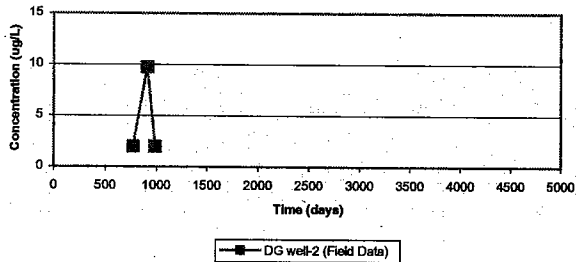
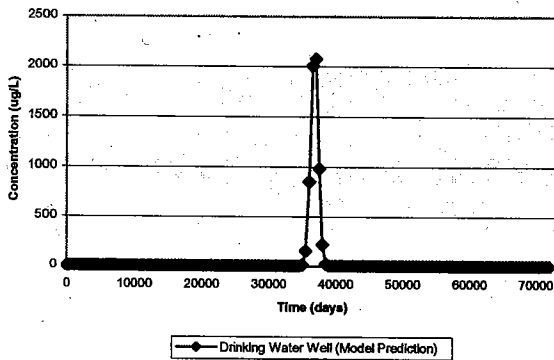


Fig. 3 Model Predicted Time Vs. MTBE Concentration Profile for Drinking Water Well



4/17/2003			
8/26/2003	131.00		
11/14/2003	80.00		
2/21/2004	99.00		
4/30/2004	69.00		
7/10/2004	71.00		
11/5/2004	118.00	11/5/2004	568.00
3/21/2005	136.00	3/21/2005	136.00
6/2/2005	73.00	6/2/2005	73.00

September 29, 2005

Client: ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn: George Salley

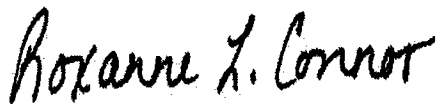
Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Nbr: ERI 3163 13
Date Received: 08/06/05

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
W-27-MW1	NOH0407-01	08/04/05 13:23
W-26-MW2	NOH0407-02	08/04/05 13:48
W-27-MW3	NOH0407-03	08/04/05 13:28
W-26-MW4	NOH0407-04	08/04/05 13:56
W-26-MW5	NOH0407-05	08/04/05 13:51
W-26-MW6	NOH0407-06	08/04/05 13:38
W-27-MW7	NOH0407-07	08/04/05 13:18
Trip Blanks	NOH0407-08	08/04/05

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980. Any opinions, if expressed, are outside the scope of the Laboratory's accreditation.

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These results relate only to the items tested. This report shall not be reproduced except in full and with permission of the laboratory.
Report Approved By:



Roxanne Connor
Senior Project Manager

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MDL	MRL	Dilution Analysis		Method	Analyst	Batch
						Factor	Date/Time			
Sample ID: NOH0407-01 (W-27-MW1 - Water) Sampled: 08/04/05 13:23										
Oxygenates by EPA 8260B										
Tert-Amyl Methyl Ether	<1.00		ug/L	0.300	1.00	1	08/10/05 05:22	SW846 8260B	hp4	5080618
Benzene	<0.500		ug/L	0.250	0.500	1	08/10/05 05:22	SW846 8260B	hp4	5080618
Ethyl tert-Butyl Ether	<1.00		ug/L	0.270	1.00	1	08/10/05 05:22	SW846 8260B	hp4	5080618
Ethylbenzene	<0.500		ug/L	0.190	0.500	1	08/10/05 05:22	SW846 8260B	hp4	5080618
Isopropyl Ether	<1.00		ug/L	0.180	1.00	1	08/10/05 05:22	SW846 8260B	hp4	5080618
Methyl tert-Butyl Ether	1.47		ug/L	0.230	1.00	1	08/10/05 05:22	SW846 8260B	hp4	5080618
Toluene	<0.500		ug/L	0.170	0.500	1	08/10/05 05:22	SW846 8260B	hp4	5080618
Tertiary Butyl Alcohol	<10.0		ug/L	4.28	10.0	1	08/10/05 05:22	SW846 8260B	hp4	5080618
Xylenes, total	<0.500		ug/L	0.330	0.500	1	08/10/05 05:22	SW846 8260B	hp4	5080618
Surrogate: 1,2-Dichloroethane-d4 (73-127%)	123 %		-	-	1	08/10/05 05:22	SW846 8260B	hp4	5080618	
Surrogate: Dibromofluoromethane (75-137%)	112 %		-	-	1	08/10/05 05:22	SW846 8260B	hp4	5080618	
Surrogate: Toluene-d8 (79-113%)	110 %		-	-	1	08/10/05 05:22	SW846 8260B	hp4	5080618	
Surrogate: 4-Bromofluorobenzene (79-125%)	111 %		-	-	1	08/10/05 05:22	SW846 8260B	hp4	5080618	
Extractable Petroleum Hydrocarbons										
Diesel range organics	<500		ug/L	33.0	500	1	08/10/05 15:28	CA LUFT	bay	5080469
Surrogate: o-Terphenyl (55-150%)	97 %		-	-	1	08/10/05 15:28	CA LUFT	bay	5080469	
Purgeable Petroleum Hydrocarbons										
GRO (C4-C12)	308		ug/L	33.0	50.0	1	08/09/05 20:50	CA LUFT	kc	5080535
Surrogate: a,a,a-Trifluorotoluene (63-134%)	91 %		-	-	1	08/09/05 20:50	CA LUFT	kc	5080535	
Sample ID: NOH0407-02 (W-26-MW2 - Water) Sampled: 08/04/05 13:48										
Oxygenates by EPA 8260B										
Tert-Amyl Methyl Ether	<1.00		ug/L	0.300	1.00	1	08/10/05 12:10	SW846 8260B	hp4	5080618
Benzene	6.26		ug/L	0.250	0.500	1	08/10/05 12:10	SW846 8260B	hp4	5080618
Ethyl tert-Butyl Ether	<1.00		ug/L	0.270	1.00	1	08/10/05 12:10	SW846 8260B	hp4	5080618
Ethylbenzene	855		ug/L	3.80	10.0	20	08/10/05 12:39	SW846 8260B	hp4	5080618
Isopropyl Ether	<1.00		ug/L	0.180	1.00	1	08/10/05 12:10	SW846 8260B	hp4	5080618
Methyl tert-Butyl Ether	435		ug/L	4.60	20.0	20	08/10/05 12:39	SW846 8260B	hp4	5080618
Toluene	181		ug/L	0.170	0.500	1	08/10/05 12:10	SW846 8260B	hp4	5080618
Tertiary Butyl Alcohol	129		ug/L	4.28	10.0	1	08/10/05 12:10	SW846 8260B	hp4	5080618
Xylenes, total	307		ug/L	0.330	0.500	1	08/10/05 12:10	SW846 8260B	hp4	5080618
Surrogate: 1,2-Dichloroethane-d4 (73-127%)	117 %		-	-	1	08/10/05 12:10	SW846 8260B	hp4	5080618	
Surrogate: 1,2-Dichloroethane-d4 (73-127%)	115 %		-	-	1	08/10/05 12:39	SW846 8260B	hp4	5080618	
Surrogate: Dibromofluoromethane (75-137%)	110 %		-	-	1	08/10/05 12:10	SW846 8260B	hp4	5080618	
Surrogate: Dibromofluoromethane (75-137%)	110 %		-	-	1	08/10/05 12:39	SW846 8260B	hp4	5080618	
Surrogate: Toluene-d8 (79-113%)	102 %		-	-	1	08/10/05 12:10	SW846 8260B	hp4	5080618	
Surrogate: Toluene-d8 (79-113%)	109 %		-	-	1	08/10/05 12:39	SW846 8260B	hp4	5080618	
Surrogate: 4-Bromofluorobenzene (79-125%)	106 %		-	-	1	08/10/05 12:10	SW846 8260B	hp4	5080618	
Surrogate: 4-Bromofluorobenzene (79-125%)	106 %		-	-	1	08/10/05 12:39	SW846 8260B	hp4	5080618	
Extractable Petroleum Hydrocarbons										
Diesel range organics	101	J	ug/L	33.0	500	1	08/10/05 15:45	CA LUFT	bay	5080469
Surrogate: o-Terphenyl (55-150%)	87 %		-	-	1	08/10/05 15:45	CA LUFT	bay	5080469	
Purgeable Petroleum Hydrocarbons										

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MDL	MRL	Dilution Analysis		Method	Analyst	Batch
						Factor	Date/Time			
Sample ID: NOH0407-02RE1 (W-26-MW2 - Water) - cont. Sampled: 08/04/05 13:48										
Purgeable Petroleum Hydrocarbons - cont.										
GRO (C4-C12)	5820		ug/L	330	500	10	08/10/05 14:18	CA LUFT	kc	5080959
Surrogate: a,a,a-Trifluorotoluene (63-134%)	85 %		-	-	1	08/10/05 14:18	CA LUFT	kc	5080959	
Sample ID: NOH0407-03 (W-27-MW3 - Water) Sampled: 08/04/05 13:28										
Oxygenates by EPA 8260B										
Tert-Amyl Methyl Ether	<1.00		ug/L	0.300	1.00	1	08/10/05 05:51	SW846 8260B	hp4	5080618
Benzene	0.730		ug/L	0.250	0.500	1	08/10/05 05:51	SW846 8260B	hp4	5080618
Ethyl tert-Butyl Ether	<1.00		ug/L	0.270	1.00	1	08/10/05 05:51	SW846 8260B	hp4	5080618
Ethylbenzene	1.06		ug/L	0.190	0.500	1	08/10/05 05:51	SW846 8260B	hp4	5080618
Isopropyl Ether	<1.00		ug/L	0.180	1.00	1	08/10/05 05:51	SW846 8260B	hp4	5080618
Methyl tert-Butyl Ether	140		ug/L	0.230	1.00	1	08/10/05 05:51	SW846 8260B	hp4	5080618
Toluene	<0.500		ug/L	0.170	0.500	1	08/10/05 05:51	SW846 8260B	hp4	5080618
Tertiary Butyl Alcohol	<10.0		ug/L	4.28	10.0	1	08/10/05 05:51	SW846 8260B	hp4	5080618
Xylenes, total	<0.500		ug/L	0.330	0.500	1	08/10/05 05:51	SW846 8260B	hp4	5080618
Surrogate: 1,2-Dichloroethane-d4 (73-127%)	122 %		-	-	1	08/10/05 05:51	SW846 8260B	hp4	5080618	
Surrogate: Dibromofluoromethane (75-137%)	112 %		-	-	1	08/10/05 05:51	SW846 8260B	hp4	5080618	
Surrogate: Toluene-d8 (79-113%)	108 %		-	-	1	08/10/05 05:51	SW846 8260B	hp4	5080618	
Surrogate: 4-Bromofluorobenzene (79-125%)	108 %		-	-	1	08/10/05 05:51	SW846 8260B	hp4	5080618	
Extractable Petroleum Hydrocarbons										
Diesel range organics	<500		ug/L	33.0	500	1	08/10/05 16:02	CA LUFT	bay	5080469
Surrogate: o-Terphenyl (55-150%)	86 %		-	-	1	08/10/05 16:02	CA LUFT	bay	5080469	
Purgeable Petroleum Hydrocarbons										
GRO (C4-C12)	159		ug/L	33.0	50.0	1	08/17/05 00:00	CA LUFT	jf	5081220
Surrogate: a,a,a-Trifluorotoluene (63-134%)	113 %		-	-	1	08/17/05 00:00	CA LUFT	jf	5081220	
Sample ID: NOH0407-04 (W-26-MW4 - Water) Sampled: 08/04/05 13:56										
Oxygenates by EPA 8260B										
Tert-Amyl Methyl Ether	<1.00		ug/L	0.300	1.00	1	08/10/05 06:20	SW846 8260B	hp4	5080618
Benzene	0.510		ug/L	0.250	0.500	1	08/10/05 06:20	SW846 8260B	hp4	5080618
Ethyl tert-Butyl Ether	<1.00		ug/L	0.270	1.00	1	08/10/05 06:20	SW846 8260B	hp4	5080618
Ethylbenzene	<0.500		ug/L	0.190	0.500	1	08/10/05 06:20	SW846 8260B	hp4	5080618
Isopropyl Ether	<1.00		ug/L	0.180	1.00	1	08/10/05 06:20	SW846 8260B	hp4	5080618
Methyl tert-Butyl Ether	<1.00		ug/L	0.230	1.00	1	08/10/05 06:20	SW846 8260B	hp4	5080618
Toluene	<0.500		ug/L	0.170	0.500	1	08/10/05 06:20	SW846 8260B	hp4	5080618
Tertiary Butyl Alcohol	51.4		ug/L	4.28	10.0	1	08/10/05 06:20	SW846 8260B	hp4	5080618
Xylenes, total	<0.500		ug/L	0.330	0.500	1	08/10/05 06:20	SW846 8260B	hp4	5080618
Surrogate: 1,2-Dichloroethane-d4 (73-127%)	123 %		-	-	1	08/10/05 06:20	SW846 8260B	hp4	5080618	
Surrogate: Dibromofluoromethane (75-137%)	114 %		-	-	1	08/10/05 06:20	SW846 8260B	hp4	5080618	
Surrogate: Toluene-d8 (79-113%)	107 %		-	-	1	08/10/05 06:20	SW846 8260B	hp4	5080618	
Surrogate: 4-Bromofluorobenzene (79-125%)	110 %		-	-	1	08/10/05 06:20	SW846 8260B	hp4	5080618	
Extractable Petroleum Hydrocarbons										
Diesel range organics	<500		ug/L	33.0	500	1	08/10/05 16:19	CA LUFT	bay	5080469
Surrogate: o-Terphenyl (55-150%)	97 %		-	-	1	08/10/05 16:19	CA LUFT	bay	5080469	

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MDL	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
Sample ID: NOH0407-04 (W-26-MW4 - Water) - cont. Sampled: 08/04/05 13:56										
Purgeable Petroleum Hydrocarbons										
GRO (C4-C12)	1950		ug/L	33.0	50.0	1	08/17/05 00:32	CA LUFT	jf	5081220
Surrogate: <i>a,a,a</i> -Trifluorotoluene (63-134%)	116 %		-	-	1		08/17/05 00:32	CA LUFT	jf	5081220
Sample ID: NOH0407-05 (W-26-MW5 - Water) Sampled: 08/04/05 13:51										
Oxygenates by EPA 8260B										
Tert-Amyl Methyl Ether	<1.00		ug/L	0.300	1.00	1	08/10/05 06:50	SW846 8260B	hp4	5080618
Benzene	5.14		ug/L	0.250	0.500	1	08/10/05 06:50	SW846 8260B	hp4	5080618
Ethyl tert-Butyl Ether	<1.00		ug/L	0.270	1.00	1	08/10/05 06:50	SW846 8260B	hp4	5080618
Ethylbenzene	140		ug/L	0.190	0.500	1	08/10/05 06:50	SW846 8260B	hp4	5080618
Isopropyl Ether	<1.00		ug/L	0.180	1.00	1	08/10/05 06:50	SW846 8260B	hp4	5080618
Methyl tert-Butyl Ether	4.40		ug/L	0.230	1.00	1	08/10/05 06:50	SW846 8260B	hp4	5080618
Toluene	54.9		ug/L	0.170	0.500	1	08/10/05 06:50	SW846 8260B	hp4	5080618
Tertiary Butyl Alcohol	216		ug/L	4.28	10.0	1	08/10/05 06:50	SW846 8260B	hp4	5080618
Xylenes, total	229		ug/L	0.330	0.500	1	08/10/05 06:50	SW846 8260B	hp4	5080618
Surrogate: <i>1,2</i> -Dichloroethane- <i>d</i> 4 (73-127%)	121 %		-	-	1		08/10/05 06:50	SW846 8260B	hp4	5080618
Surrogate: Dibromofluoromethane (75-137%)	114 %		-	-	1		08/10/05 06:50	SW846 8260B	hp4	5080618
Surrogate: Toluene- <i>d</i> 8 (79-113%)	106 %		-	-	1		08/10/05 06:50	SW846 8260B	hp4	5080618
Surrogate: 4-Bromofluorobenzene (79-125%)	104 %		-	-	1		08/10/05 06:50	SW846 8260B	hp4	5080618
Extractable Petroleum Hydrocarbons										
Diesel range organics	<500		ug/L	33.0	500	1	08/10/05 16:36	CA LUFT	bay	5080469
Surrogate: <i>o</i> -Terphenyl (55-150%)	79 %		-	-	1		08/10/05 16:36	CA LUFT	bay	5080469
Purgeable Petroleum Hydrocarbons										
GRO (C4-C12)	2000		ug/L	33.0	50.0	1	08/17/05 01:04	CA LUFT	jf	5081220
Surrogate: <i>a,a,a</i> -Trifluorotoluene (63-134%)	105 %		-	-	1		08/17/05 01:04	CA LUFT	jf	5081220
Sample ID: NOH0407-06 (W-26-MW6 - Water) Sampled: 08/04/05 13:38										
Oxygenates by EPA 8260B										
Tert-Amyl Methyl Ether	<1.00		ug/L	0.300	1.00	1	08/10/05 17:01	SW846 8260B	hp4	5080618
Benzene	<0.500		ug/L	0.250	0.500	1	08/10/05 17:01	SW846 8260B	hp4	5080774
Ethyl tert-Butyl Ether	<1.00		ug/L	0.270	1.00	1	08/10/05 17:01	SW846 8260B	hp4	5080618
Ethylbenzene	685		ug/L	3.80	10.0	20	08/10/05 17:30	SW846 8260B	hp4	5080774
Isopropyl Ether	<1.00		ug/L	0.180	1.00	1	08/10/05 17:01	SW846 8260B	hp4	5080618
Methyl tert-Butyl Ether	1.91		ug/L	0.230	1.00	1	08/10/05 17:01	SW846 8260B	hp4	5080618
Toluene	1.94		ug/L	0.170	0.500	1	08/10/05 17:01	SW846 8260B	hp4	5080774
Tertiary Butyl Alcohol	<10.0		ug/L	4.28	10.0	1	08/10/05 17:01	SW846 8260B	hp4	5080618
Xylenes, total	94.3		ug/L	0.330	0.500	1	08/10/05 17:01	SW846 8260B	hp4	5080774
Surrogate: <i>1,2</i> -Dichloroethane- <i>d</i> 4 (73-127%)	120 %		-	-	1		08/10/05 17:01	SW846 8260B	hp4	5080774
Surrogate: <i>1,2</i> -Dichloroethane- <i>d</i> 4 (73-127%)	114 %		-	-	1		08/10/05 17:30	SW846 8260B	hp4	5080774
Surrogate: Dibromofluoromethane (75-137%)	111 %		-	-	1		08/10/05 17:01	SW846 8260B	hp4	5080774
Surrogate: Dibromofluoromethane (75-137%)	110 %		-	-	1		08/10/05 17:30	SW846 8260B	hp4	5080774
Surrogate: Toluene- <i>d</i> 8 (79-113%)	103 %		-	-	1		08/10/05 17:01	SW846 8260B	hp4	5080774
Surrogate: Toluene- <i>d</i> 8 (79-113%)	106 %		-	-	1		08/10/05 17:30	SW846 8260B	hp4	5080774
Surrogate: 4-Bromofluorobenzene (79-125%)	106 %		-	-	1		08/10/05 17:01	SW846 8260B	hp4	5080774
Surrogate: 4-Bromofluorobenzene (79-125%)	109 %		-	-	1		08/10/05 17:30	SW846 8260B	hp4	5080774

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MDL	MRL	Dilution Factor	Analysis Date/Time	Method	Analyst	Batch
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Sample ID: NOH0407-06RE1 (W-26-MW6 - Water) - cont. Sampled: 08/04/05 13:38

Extractable Petroleum Hydrocarbons

Diesel range organics	197	J	ug/L	33.0	500	1	08/10/05 16:53	CALUFT	bay	5080469
Surrogate: o-Terphenyl (55-150%)	81 %		-	-	1		08/10/05 16:53	CALUFT	bay	5080469

Purgeable Petroleum Hydrocarbons

GRO (C4-C12)	4910		ug/L	33.0	50.0	1	08/17/05 01:37	CALUFT	jf	5081220
Surrogate: a,a,a-Trifluorotoluene (63-134%)	108 %		-	-	1		08/17/05 01:37	CALUFT	jf	5081220

Sample ID: NOH0407-07 (W-27-MW7 - Water) Sampled: 08/04/05 13:18

Oxygenates by EPA 8260B

Tert-Amyl Methyl Ether	<1.00		ug/L	0.300	1.00	1	08/10/05 07:19	SW846 8260B	hp4	5080618
Benzene	<0.500		ug/L	0.250	0.500	1	08/10/05 07:19	SW846 8260B	hp4	5080618
Ethyl tert-Butyl Ether	<1.00		ug/L	0.270	1.00	1	08/10/05 07:19	SW846 8260B	hp4	5080618
Ethylbenzene	<0.500		ug/L	0.190	0.500	1	08/10/05 07:19	SW846 8260B	hp4	5080618
Isopropyl Ether	<1.00		ug/L	0.180	1.00	1	08/10/05 07:19	SW846 8260B	hp4	5080618
Methyl tert-Butyl Ether	<1.00		ug/L	0.230	1.00	1	08/10/05 07:19	SW846 8260B	hp4	5080618
Toluene	<0.500		ug/L	0.170	0.500	1	08/10/05 07:19	SW846 8260B	hp4	5080618
Tertiary Butyl Alcohol	47.2		ug/L	4.28	10.0	1	08/10/05 07:19	SW846 8260B	hp4	5080618
Xylenes, total	<0.500		ug/L	0.330	0.500	1	08/10/05 07:19	SW846 8260B	hp4	5080618
Surrogate: 1,2-Dichloroethane-d4 (73-127%)	120 %		-	-	1		08/10/05 07:19	SW846 8260B	hp4	5080618
Surrogate: Dibromofluoromethane (75-137%)	111 %		-	-	1		08/10/05 07:19	SW846 8260B	hp4	5080618
Surrogate: Toluene-d8 (79-113%)	108 %		-	-	1		08/10/05 07:19	SW846 8260B	hp4	5080618
Surrogate: 4-Bromofluorobenzene (79-125%)	110 %		-	-	1		08/10/05 07:19	SW846 8260B	hp4	5080618

Extractable Petroleum Hydrocarbons

Diesel range organics	<500		ug/L	33.0	500	1	08/10/05 17:10	CALUFT	bay	5080469
Surrogate: o-Terphenyl (55-150%)	90 %		-	-	1		08/10/05 17:10	CALUFT	bay	5080469

Purgeable Petroleum Hydrocarbons

GRO (C4-C12)	79.0		ug/L	33.0	50.0	1	08/17/05 02:09	CALUFT	jf	5081220
Surrogate: a,a,a-Trifluorotoluene (63-134%)	106 %		-	-	1		08/17/05 02:09	CALUFT	jf	5081220

Sample ID: NOH0407-08 (Trip Blanks - Water) Sampled: 08/04/05

Oxygenates by EPA 8260B

Tert-Amyl Methyl Ether	<1.00		ug/L	0.300	1.00	1	08/10/05 07:48	SW846 8260B	hp4	5080618
Benzene	<0.500		ug/L	0.250	0.500	1	08/10/05 07:48	SW846 8260B	hp4	5080618
Ethyl tert-Butyl Ether	<1.00		ug/L	0.270	1.00	1	08/10/05 07:48	SW846 8260B	hp4	5080618
Ethylbenzene	<0.500		ug/L	0.190	0.500	1	08/10/05 07:48	SW846 8260B	hp4	5080618
Isopropyl Ether	<1.00		ug/L	0.180	1.00	1	08/10/05 07:48	SW846 8260B	hp4	5080618
Methyl tert-Butyl Ether	<1.00		ug/L	0.230	1.00	1	08/10/05 07:48	SW846 8260B	hp4	5080618
Toluene	<0.500		ug/L	0.170	0.500	1	08/10/05 07:48	SW846 8260B	hp4	5080618
Tertiary Butyl Alcohol	<10.0		ug/L	4.28	10.0	1	08/10/05 07:48	SW846 8260B	hp4	5080618
Xylenes, total	<0.500		ug/L	0.330	0.500	1	08/10/05 07:48	SW846 8260B	hp4	5080618
Surrogate: 1,2-Dichloroethane-d4 (73-127%)	122 %		-	-	1		08/10/05 07:48	SW846 8260B	hp4	5080618
Surrogate: Dibromofluoromethane (75-137%)	112 %		-	-	1		08/10/05 07:48	SW846 8260B	hp4	5080618
Surrogate: Toluene-d8 (79-113%)	112 %		-	-	1		08/10/05 07:48	SW846 8260B	hp4	5080618
Surrogate: 4-Bromofluorobenzene (79-125%)	104 %		-	-	1		08/10/05 07:48	SW846 8260B	hp4	5080618

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MDL	MRL	Dilution Analysis		Method	Analyst	Batch
						Factor	Date/Time			
Sample ID: NOH0407-08 (Trip Blanks - Water) - cont. Sampled: 08/04/05										
Purgeable Petroleum Hydrocarbons										
GRO (C4-C12)	<50.0		ug/L	33.0	50.0	1	08/16/05 22:55	CALUFT	jf	5081220
Surrogate: a,a,a-Trifluorotoluene (63-134%)	112 %		-	-	1		08/16/05 22:55	CALUFT	ff	5081220

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

SAMPLE EXTRACTION DATA

Parameter	Batch	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Extraction Method
Extractable Petroleum Hydrocarbons							
CA LUFT	5080469	NOH0407-01	1000.00	1.00	08/09/05 14:45	ADG	EPA 3510C
CA LUFT	5080469	NOH0407-02	1000.00	1.00	08/09/05 14:45	ADG	EPA 3510C
CA LUFT	5080469	NOH0407-03	1000.00	1.00	08/09/05 14:45	ADG	EPA 3510C
CA LUFT	5080469	NOH0407-04	1000.00	1.00	08/09/05 14:45	ADG	EPA 3510C
CA LUFT	5080469	NOH0407-05	1000.00	1.00	08/09/05 14:45	ADG	EPA 3510C
CA LUFT	5080469	NOH0407-06	1000.00	1.00	08/09/05 14:45	ADG	EPA 3510C
CA LUFT	5080469	NOH0407-07	1000.00	1.00	08/09/05 14:45	ADG	EPA 3510C

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

PROJECT QUALITY CONTROL DATA

Blank

Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number	Analyzed Date/Time
Oxygenates by EPA 8260B						
5080618-BLK1						
Tert-Amyl Methyl Ether	<0.300		ug/L	5080618	5080618-BLK1	08/10/05 04:53
Benzene	<0.250		ug/L	5080618	5080618-BLK1	08/10/05 04:53
Ethyl tert-Butyl Ether	<0.270		ug/L	5080618	5080618-BLK1	08/10/05 04:53
Ethylbenzene	<0.190		ug/L	5080618	5080618-BLK1	08/10/05 04:53
Isopropyl Ether	<0.180		ug/L	5080618	5080618-BLK1	08/10/05 04:53
Methyl tert-Butyl Ether	<0.230		ug/L	5080618	5080618-BLK1	08/10/05 04:53
Toluene	<0.170		ug/L	5080618	5080618-BLK1	08/10/05 04:53
Tertiary Butyl Alcohol	<4.28		ug/L	5080618	5080618-BLK1	08/10/05 04:53
Xylenes, total	<0.330		ug/L	5080618	5080618-BLK1	08/10/05 04:53
Surrogate: 1,2-Dichloroethane-d4	118%			5080618	5080618-BLK1	08/10/05 04:53
Surrogate: Dibromofluoromethane	110%			5080618	5080618-BLK1	08/10/05 04:53
Surrogate: Toluene-d8	110%			5080618	5080618-BLK1	08/10/05 04:53
Surrogate: 4-Bromofluorobenzene	107%			5080618	5080618-BLK1	08/10/05 04:53
5080774-BLK1						
Benzene	<0.250		ug/L	5080774	5080774-BLK1	08/10/05 16:32
Ethylbenzene	<0.190		ug/L	5080774	5080774-BLK1	08/10/05 16:32
Toluene	<0.170		ug/L	5080774	5080774-BLK1	08/10/05 16:32
Xylenes, total	<0.330		ug/L	5080774	5080774-BLK1	08/10/05 16:32
Surrogate: 1,2-Dichloroethane-d4	121%			5080774	5080774-BLK1	08/10/05 16:32
Surrogate: Dibromofluoromethane	112%			5080774	5080774-BLK1	08/10/05 16:32
Surrogate: Toluene-d8	107%			5080774	5080774-BLK1	08/10/05 16:32
Surrogate: 4-Bromofluorobenzene	107%			5080774	5080774-BLK1	08/10/05 16:32
Extractable Petroleum Hydrocarbons						
5080469-BLK1						
Diesel range organics	<33.0		ug/L	5080469	5080469-BLK1	08/10/05 14:54
Surrogate: o-Terphenyl	88%			5080469	5080469-BLK1	08/10/05 14:54
Purgeable Petroleum Hydrocarbons						
5080535-BLK1						
GRO (C4-C12)	<33.0		ug/L	5080535	5080535-BLK1	08/09/05 15:32
Surrogate: a,a,a-Trifluorotoluene	100%			5080535	5080535-BLK1	08/09/05 15:32
5080535-BLK2						
GRO (C4-C12)	<33.0		ug/L	5080535	5080535-BLK2	08/09/05 15:48
Surrogate: a,a,a-Trifluorotoluene	92%			5080535	5080535-BLK2	08/09/05 15:48
5080959-BLK1						
GRO (C4-C12)	<33.0		ug/L	5080959	5080959-BLK1	08/10/05 10:33
Surrogate: a,a,a-Trifluorotoluene	93%			5080959	5080959-BLK1	08/10/05 10:33

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

PROJECT QUALITY CONTROL DATA

Blank - Cont.

Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number	Analyzed Date/Time
Purgeable Petroleum Hydrocarbons						
5080959-BLK2						
GRO (C4-C12)	<33.0		ug/L	5080959	5080959-BLK2	08/10/05 10:48
Surrogate: <i>a, a, a-Trifluorotoluene</i>	82%			5080959	5080959-BLK2	08/10/05 10:48
5081220-BLK1						
GRO (C4-C12)	<33.0		ug/L	5081220	5081220-BLK1	08/16/05 19:18
Surrogate: <i>a, a, a-Trifluorotoluene</i>	108%			5081220	5081220-BLK1	08/16/05 19:18

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

PROJECT QUALITY CONTROL DATA

LCS

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec.	Target Range	Batch	Analyzed Date/Time
Oxygenates by EPA 8260B								
5080618-BS1								
Tert-Amyl Methyl Ether	50.0	54.1		ug/L	108%	68 - 134	5080618	08/10/05 03:26
Benzene	50.0	53.0		ug/L	106%	78 - 123	5080618	08/10/05 13:08
Ethyl tert-Butyl Ether	50.0	54.2		ug/L	108%	67 - 140	5080618	08/10/05 03:26
Ethylbenzene	50.0	58.7		ug/L	117%	80 - 124	5080618	08/10/05 13:08
Isopropyl Ether	50.0	52.0		ug/L	104%	65 - 140	5080618	08/10/05 03:26
Methyl tert-Butyl Ether	50.0	54.4		ug/L	109%	69 - 136	5080618	08/10/05 03:26
Toluene	50.0	53.4		ug/L	107%	77 - 124	5080618	08/10/05 13:08
Tertiary Butyl Alcohol	500	468		ug/L	94%	28 - 182	5080618	08/10/05 03:26
Xylenes, total	150	170		ug/L	113%	81 - 124	5080618	08/10/05 13:08
Surrogate: 1,2-Dichloroethane-d4	50.0	56.9			114%	73 - 127	5080618	08/10/05 13:08
Surrogate: 1,2-Dichloroethane-d4	50.0	57.3			115%	70 - 130	5080618	08/10/05 03:26
Surrogate: Dibromofluoromethane	50.0	53.6			107%	75 - 137	5080618	08/10/05 13:08
Surrogate: Dibromofluoromethane	50.0	52.9			106%	79 - 122	5080618	08/10/05 03:26
Surrogate: Toluene-d8	50.0	50.7			101%	79 - 113	5080618	08/10/05 13:08
Surrogate: Toluene-d8	50.0	51.7			103%	78 - 121	5080618	08/10/05 03:26
Surrogate: 4-Bromofluorobenzene	50.0	52.7			105%	79 - 125	5080618	08/10/05 13:08
Surrogate: 4-Bromofluorobenzene	50.0	52.2			104%	78 - 126	5080618	08/10/05 03:26
5080774-BS1								
Benzene	50.0	52.7		ug/L	105%	78 - 123	5080774	08/10/05 15:04
Ethylbenzene	50.0	58.9		ug/L	118%	80 - 124	5080774	08/10/05 15:04
Toluene	50.0	54.6		ug/L	109%	77 - 124	5080774	08/10/05 15:04
Xylenes, total	150	172		ug/L	115%	81 - 124	5080774	08/10/05 15:04
Surrogate: 1,2-Dichloroethane-d4	50.0	56.8			114%	73 - 127	5080774	08/10/05 15:04
Surrogate: Dibromofluoromethane	50.0	53.5			107%	75 - 137	5080774	08/10/05 15:04
Surrogate: Toluene-d8	50.0	52.3			105%	79 - 113	5080774	08/10/05 15:04
Surrogate: 4-Bromofluorobenzene	50.0	52.2			104%	79 - 125	5080774	08/10/05 15:04
Extractable Petroleum Hydrocarbons								
5080469-BS1								
Diesel range organics	1000	862		ug/L	86%	43 - 119	5080469	08/10/05 15:11
Surrogate: o-Terphenyl	20.0	16.3			82%	55 - 150	5080469	08/10/05 15:11
Purgeable Petroleum Hydrocarbons								
5080535-BS1								
GRO (C4-C12)	1000	715		ug/L	72%	64 - 130	5080535	08/09/05 21:51
Surrogate: a,a,a-Trifluorotoluene	30.0	28.4			95%	63 - 134	5080535	08/09/05 21:51
5080535-BS2								
GRO (C4-C12)	1000	641		ug/L	64%	64 - 130	5080535	08/09/05 22:06
Surrogate: a,a,a-Trifluorotoluene	30.0	24.9			83%	63 - 134	5080535	08/09/05 22:06

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

PROJECT QUALITY CONTROL DATA

LCS - Cont.

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec.	Target Range	Batch	Analyzed Date/Time
Purgeable Petroleum Hydrocarbons								
5080959-BS1								
GRO (C4-C12)	1000	1030		ug/L	103%	64 - 130	5080959	08/10/05 16:10
Surrogate: <i>a,a,a</i> -Trifluorotoluene	30.0	29.6			99%	63 - 134	5080959	08/10/05 16:10
5081220-BS1								
GRO (C4-C12)	1000	1030		ug/L	103%	64 - 130	5081220	08/17/05 10:27
Surrogate: <i>a,a,a</i> -Trifluorotoluene	30.0	33.5			112%	63 - 134	5081220	08/17/05 10:27

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

PROJECT QUALITY CONTROL DATA

LCS Dup

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec.	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
Volatile Organic Compounds by EPA Method 8260B												
5080774-BSD1												
Benzene		51.3		ug/L	50.0	103%	78 - 123	3	27	5080774		08/11/05 02:13
Ethylbenzene		56.7		ug/L	50.0	113%	80 - 124	4	28	5080774		08/11/05 02:13
Toluene		51.9		ug/L	50.0	104%	77 - 124	5	34	5080774		08/11/05 02:13
Xylenes, total		166		ug/L	150	111%	81 - 124	4	25	5080774		08/11/05 02:13
Surrogate: 1,2-Dichloroethane-d4		59.9		ug/L	50.0	120%	73 - 127			5080774		08/11/05 02:13
Surrogate: Dibromofluoromethane		55.1		ug/L	50.0	110%	75 - 137			5080774		08/11/05 02:13
Surrogate: Toluene-d8		52.6		ug/L	50.0	105%	79 - 113			5080774		08/11/05 02:13
Surrogate: 4-Bromofluorobenzene		51.7		ug/L	50.0	103%	79 - 125			5080774		08/11/05 02:13
Purgeable Petroleum Hydrocarbons												
5080959-BSD1												
GRO (C4-C12)		958		ug/L	1000	96%	64 - 130	7	27	5080959		08/10/05 16:25
Surrogate: a,a,a-Trifluorotoluene		26.8		ug/L	30.0	89%	63 - 134			5080959		08/10/05 16:25

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

PROJECT QUALITY CONTROL DATA

Matrix Spike

Analyte	Orig. Val.	MS Val	Q	Units	Spike Conc	% Rec.	Target Range	Batch	Sample Spiked	Analyzed Date/Time
Purgeable Petroleum Hydrocarbons										
5080535-MS1										
GRO (C4-C12)	308	1050		ug/L	1000	74%	43 - 150	5080535	NOH0407-01	08/09/05 21:20
Surrogate: <i>a,a,a</i> -Trifluorotoluene		27.3		ug/L	30.0	91%	63 - 134	5080535	NOH0407-01	08/09/05 21:20

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

PROJECT QUALITY CONTROL DATA

Matrix Spike Dup

Analyte	Orig. Val.	Duplicate	Q	Units	Spike Conc	% Rec.	Target Range	RPD	Limit	Batch	Sample Duplicated	Analyzed Date/Time
Purgeable Petroleum Hydrocarbons												
5080535-MSD1												
GRO (C4-C12)	308	913		ug/L	1000	60%	43 - 150	14	27	5080535	NOH0407-01	08/09/05 21:36
Surrogate: <i>a, a, a</i> -Trifluorotoluene		22.4		ug/L	30.0	75%	63 - 134			5080535	NOH0407-01	08/09/05 21:36

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

CERTIFICATION SUMMARY

TestAmerica Analytical - Nashville

Method	Matrix	AIHA	Nelac	California
CA LUFT	Water		X	X
SW846 8260B	Water	N/A	X	X

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

NELAC CERTIFICATION SUMMARY

TestAmerica Analytical - Nashville does not hold NELAC certifications for the following analytes included in this report

Method

Matrix

Analyte

Client ERI Lake Forest (10203)
20372 North Sea Circle
Lake Forest, CA 92630
Attn George Salley

Work Order: NOH0407
Project Name: Exxon 18-MLJ PO:4506125986
Project Number: ERI 3163 13
Received: 08/06/05 08:00

DATA QUALIFIERS AND DEFINITIONS

J Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.



COOLER RECEIPT FORM

BC# NOH0407

Client Name : ERI

Cooler Received/Opened On: 8/6/05 Accessioned By: Mike McBride

[Signature]
Log-in Personnel Signature

1. Temperature of Cooler when triaged: 2.1 Degrees Celsius
2. Were custody seals on outside of cooler?..... ☒ YES...NO...NA
 - a. If yes, how many and where: (1) Front
3. Were custody seals on containers?..... ☒ NO...YES...NA
4. Were the seals intact, signed, and dated correctly?..... ☒ YES...NO...NA
5. Were custody papers inside cooler?..... ☒ YES...NO...NA
6. Were custody papers properly filled out (ink, signed, etc)?..... ☒ YES...NO...NA
7. Did you sign the custody papers in the appropriate place?..... ☒ YES...NO...NA
8. What kind of packing material used? ☒ Bubblewrap Peanuts Vermiculite Foam Insert
 Ziplock baggies Paper Other None
9. Cooling process: ☒ Ice Ice-pack Ice (direct contact) Dry ice Other None
10. Did all containers arrive in good condition (unbroken)?..... ☒ YES...NO...NA
11. Were all container labels complete (#, date, signed, pres., etc)?..... ☒ YES...NO...NA
12. Did all container labels and tags agree with custody papers?..... ☒ YES...NO...NA
13. Were correct containers used for the analysis requested?..... ☒ YES...NO...NA
14. a. Were VOA vials received?..... ☒ YES...NO...NA
 - b. Was there any observable head space present in any VOA vial?..... ☒ NO...YES...NA
15. Was sufficient amount of sample sent in each container?..... ☒ YES...NO...NA
16. Were correct preservatives used?..... ☒ YES...NO...NA

If not, record standard ID of preservative used here _____
17. Was residual chlorine present?..... ☒ NO...YES...NA
18. Indicate the Airbill Tracking Number (last 4 digits for Fedex only) and Name of Courier below:

9341
☒ Fed-Ex UPS Velocity DHL Route Off-street Misc.

19. If a Non-Conformance exists, see attached or comments below:



Nashville Division
2960 Foster Creighton
Nashville, TN 37204

Phone: 615-726-1477
Toll Free: 800-761-080
Fax: 615-726-3404

NOH0407
08/17/05 17:00

ExxonMobil

Consultant Name: Environmental Resolutions, Inc.

Address: 20372 North Sea Circle

City/State/Zip: Lake Forest, CA 92630

ExxonMobil Territory Mgr: Marla Guensler

Consultant Project Mgr: GEORGE SALLEY

Consultant Telephone Number: 949-457-8950

Fax No.: 949-457-8956

Sampler Name: (Print) *Edward R. Ruse*

Sampler Signature: *[Signature]*

TA Account #:

10203

Invoice To:

Marla Guensler

Report To:

GEORGE SALLEY

PO #:

4506125986

Facility ID #

ERI 3163 13 / EXXONMOBIL 18MLJ

Site Address

5005 NORTH LONG BEACH

City, State, Zip

LONG BEACH, CA

Regulatory District (CA)

LARWQCB

Sample ID or Field ID	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative							Matrix					Analyze For:											Due Date of Report				
							Methanol	Sodium Bisulfate	HCl (Blue Label)	NaOH (Orange Label)	H ₂ SO ₄ Plastic (Yellow Label)	H ₂ SO ₄ Glass (Yellow Label)	HNO ₃ (Red Label)	None (Black Label)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	8015M DIESEL-CAL LUFT	TPH/GAS-CAL LUFT	FULL SCAN 8260B +OXYGENATES / GC/MS	METHANOL -CAL LUFT	ETHANOL (8260)	*8260B/BTEX +OXYGENATES / GC/MS	*BTEX/MTBE BY 8021	8010	REDOX POTENTIAL		NITRATE/SULFATE	METHANE(8015)	RUSH TAT (Pre-Schedule 5 Day TAT request Fax Results (yes or no)	
W-27 - MW1	8/4/05	1323	6	X				X							X						X	X										X		8/10/05
W-26 - MW2		1348																			X	X												
W-27 - MW3		1328																			X	X												
W-26 - MW4		1350																			X	X												
W-26 - MW5		1351																			X	X												
W-26 - MW6		1338																			X	X												
W-27 - MW7		1318																			X	X												
TRIP BLANKS			4																			X												
Comments/Special Instructions: +OXYGENATES WITH 8010																																		

Comments/Special Instructions:

*OXYGENATES WHEN REQUESTED ABOVE TO INCLUDE; BTEX, MTBE, DIPE, ETBE, TAME, TBA.

CONSULTANT ID # ERIL

GLOBAL ID # T0603701794

"PLEASE E-MAIL ALL EDF FILES TO
RSHEARER@ERI-US.COM"

Laboratory Comments:

Temperature Upon Receipt: 0.1c

Sample Containers Intact? Y N

VOCs Free of Headspace? Y N

QC Deliverables (please circle one)

Level 2

Level 3

Level 4

5 DAY TURN-AROUND FOR
EXXONMOBIL REQUIRED

Site Specific-if yes, please

pre-schedule w/ TestAmerica

Project Manager or attach specific instructions

Relinquished by: *[Signature]*

Date

8/5/05

Time

11:30

Received by:

[Signature]

Date

8/6/05

Time

11:30

Relinquished by: *Amotopedek*

Date

8/5/05

Time

1630

Received by (Lab personnel)

[Signature]

Date

8/6/05

Time

0700

PURGING AND SAMPLING RECORD - FIELD LOG**CLIENT NAME: EXXONMOBIL 18MLJ****ERI JOB # 3163 13****0.163 FOR A 2" WELL****SITE LOCATION: 5005 N. LONG BEACH BLVD****ANALYSIS: TPHg/8260B****0.652 FOR A 4" WELL****FIELD CREW: ER/JC/A DATE: 8/04/05****TPHd****1.167 FOR A 6" WELL**

		DEPTH TO	DEPTH TO	CASE	CASE	PRG			
WELL #	TIME	WATER	WELL	DIA	VOL(gal)	VOL	COND.	TEMP	pH
MW7	11:45 AM	27.79	48.33	4	13.41	39			
	11:58 AM					1	2.52	75.4	7.57
	12:04 PM					13	2.51	75.1	7.51
	12:11 PM					26	2.45	74.4	7.47
	12:18 PM					39	2.47	74.6	7.44
SW	1:18 PM	28.69							
COMMENTS	Water Clear								
		DEPTH TO	DEPTH TO	CASE	CASE	PRG			
WELL #	TIME	WATER	WELL	DIA	VOL	VOL	COND.	TEMP	pH
MW1	11:47 AM	27.92	49.55	4	14.12	42			
	12:00 PM					1	2.41	74.5	7.87
	12:07 PM					14	2.54	74.7	7.88
	12:15 PM					28	2.52	74.9	7.83
	12:23 PM					42	2.53	74.6	7.82
SW	1:23 PM	28.88							
COMMENTS	Water Clear								
		DEPTH TO	DEPTH TO	CASE	CASE	PRG			
WELL #	TIME	WATER	WELL	DIA	VOL	VOL	COND.	TEMP	pH
MW3	11:49 AM	27.61	49.62	4	14.3671	42			
	12:23 PM					1	3.13	73.9	7.75
	12:30 PM					14	3.11	74.6	7.71
	12:38 PM					28	3.07	74.4	7.66
	12:46 PM					42	3.05	74.2	7.65
SW	1:28 PM	28.51							
COMMENTS	Water Cloudy								
		DEPTH TO	DEPTH TO	CASE	CASE	PRG			
WELL #	TIME	WATER	WELL	DIA	VOL	VOL	COND.	TEMP	pH
MW5	1:13 PM	26.08	46.89	4	13.58	42			
	1:20 PM					1	2.68	74.6	7.44
	1:27 PM					14	2.62	74.1	7.41
	1:34 PM					28	2.69	74.7	7.38
	1:41 PM					42	2.66	74.9	7.36
SW	1:51 PM	28.01							
COMMENTS	Water Clear								

PURGING AND SAMPLING RECORD - FIELD LOG									
CLIENT NAME: EXXONMOBIL 18MLJ			ERI JOB # 3163 13			0.163 FOR A 2" WELL			
SITE LOCATION: 5005 N. LONG BEACH BLVD			ANALYSIS: TPHg/8260B			0.652 FOR A 4" WELL			
FIELD CREW: ER/JC			DATE: 8/04/05			TPHd			1.167 FOR A 6" WELL
WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW4	1:15 PM	26.21	47.65	4	14.00	42			
	1:25 PM					1	2.42	74.8	8.11
	1:32 PM					14	2.40	74.4	8.10
	1:39 PM					28	2.37	74.2	8.06
	1:46 PM					42	2.35	74.0	8.04
SW	1:56 PM	27.96							
COMMENTS: Water Cloudy									
WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW6	11:51 AM	26.44	48.38	4	14.32	42			
	12:28 PM					1	2.22	75.9	7.36
	12:35 PM					14	2.29	75.5	7.38
	12:43 PM					28	2.26	74.9	7.33
	12:51 PM					42	2.23	74.6	7.31
SW	1:38 PM	27.23							
COMMENTS: Water Cloudy									
WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW2	11:53 AM	26.62	50.76	4	15.76	48			
	12:51 PM					1	2.59	74.1	7.17
	12:59 PM					16	2.52	74.4	7.11
	1:08 PM					32	2.50	74.0	7.07
	1:17 PM					48	2.48	73.7	7.09
SW	1:48 PM	27.69							
COMMENTS: Water Clear									
WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
				4	0				
SW									
COMMENTS:									

WELL SAMPLING AND SURVEYING

- 1) Open well heads. This may require a socket or a special Allen wrench.
- 2) If the wells are not surveyed by a licensed land surveyor, then survey the wells if this hasn't been done before as follows:
 - a) Select a permanent benchmark (e.g. curb at corner of site, property line). Record on "SURVEYGW" form.
 - b) Measure and record rectangular coordinates from benchmark to each well.
 - c) Set up tripod and transit where it can see all wells and the benchmark = Station "A". If you can't see all wells, two transit locations must be used. At least one well surveyed from Station "A" must be resurveyed from Station "B". Preferably, two or more wells are resurveyed.
 - d) Carefully level the tripod using the bubble indicator.
 - e) Place stadia rod on benchmark and record height from crosshair to reference, (D_o).
 - f) Place stadia rod on each well (at the notch) and record ht. from well to crosshair, (D_w).
 - g) Calculate casing elevation as shown on data sheet SURVEYGW.

To check the accuracy in leveling the transit, set the transit in second spot and repeat steps 2c through 2g. Recalculation of casing elevations should agree within 0.01 ft. or a third placement of the tripod will be required.

- 3) Set up a decon station. This consists of four (4) buckets. Fill the first with deionized water and one (1) teaspoon (approximately one cap full) of Liquinox soap. Fill the next three (3) buckets with deionized water. To decon a probe or water level indicator, place the element and the tape in the buckets in series, finishing with a good rise. To decon a pump, place the pump, hose and wire leads into the buckets in series, and circulate water through the pump in each bucket. Move the equipment from the dirtiest to cleanest bucket, rinsing thoroughly in each bucket.
- 4) Decon the interface probe or water level indicator before inserting into each well. Review the historical groundwater concentrations and sample from cleanest well to hottest well, deconing between each well. Lower probe/indicator until it beeps - raise and lower and mark the level on the tape with your thumb. Estimate level to the nearest 0.01 ft. Note the depth to free product if present as indicated by the interface probe and the depth to water on your field notes and log. Note any odor when the probe is withdrawn from the well. Look for the notch or ink mark on the top of the well and measure all levels from that. Notch should be on the highest side of the well pipe. If no side is high, notch should be on the north side. Measure from the casing adjacent to the notch - not from the bottom of the notch. If there is no notch - make one. For sites that have free product, or historically have had free product, use a bailer to remove a sample of the top of the water column and measure the product in the bailer or look for a sheen. Take a picture of any bailers with product after labeling the bailer with the well number.
- 5) If there is free product, do not purge or sample. The presence of liquid phase hydrocarbons means the concentration in the water will be high anyway and the pump will be difficult to get clean enough to avoid contaminating other wells.
- 6) Developing: If the well has not been developed (it is new), surge the well by moving bailer up and down vigorously in the well for about 5 minutes. This will wash silt from the sand pack into the well where it can be removed.
- 7) Pull out as much silt as possible by running the bailer all the way to the bottom and withdrawing. Continue bailing until water is fairly clear or until local regulatory specifications are met. Removal of silt with the bailer will extend the pump life. Contact the Project Manager if water does not clear up by 10 casing volumes.

- 8) Decon pump by washing in TSP/water the rinsing with tap water and rinsing again with deionized water. Then pump clean water through the pump to push out any dirty water.
- 9) Purging: Place pump in well about 2 to 5 feet off bottom. Withdraw at least 3 casing volumes from the well, or until temperature, pH and conductivity stabilize (see local regulations). Be careful not to let the pump run dry. If an electric purging pump is used, such as a Grundfos pump, check the water level in the well with the water level indicator and slow pump down when water level is within 2 ft of the pump head. While purging, collect a water sample as often as possible and check for pH, conductivity, and temperature. Stable pH and conductivity would indicate the well has been filled with representative groundwater and purging is complete. If well recharges slowly, remove 1.5 casing volumes. Estimate flow rates by recording the time it takes to fill a 5-gallon bucket (1/2 of a 55-gallon barrel, etc.)
- 10) Decon pump thoroughly between each well by repeating step 7.
- 11) Label bottles with a "Sharpie Pen" when they are dry. Label as W-xx-MWy, where xx is water depth below surface in feet and y is well number (refer to SOP-1).
- 12) After the well has been developed, sample the water using a disposable bailer and surgical gloves to prevent oil from your hands from contaminating the sample. Be sure to leave no headspace or bubbles in any water sample to be tested for volatiles. Wells should be sampled within (24) hours of purging and the well should have recovered to within 80% of its volume before purging. (Slow recharge wells need to be addressed with the Project Manager - and may have to be purged slowly). Gasoline contaminated water requires at least three (3) 40 ml VOA's from each well. Preserve samples by acidifying to pH <2 (usually with two drops of HCl). Water suspected of contamination with oil or diesel requires 2 1-liter samples in amber bottles. Samples contaminated with oil will require 10 drops of H₂SO₄ for preservation. Samples for organic lead require two (2) 1-liter amber bottles.
- 13) Place like vials in a baggie and label the baggie. Put vials and baggie in an ice chest filled with ice and document samples and analyses required on a chain of custody. Take samples to the laboratory the same day samples are collected if possible, at least within 24 hours.
- 14) Clean wellhead gaskets (seals), put locking caps on the wells and replace the covers. Cover and label the drums (if any) of purge and decon water.

<u>Analysis</u>	<u>Bottles</u>	<u>Preservative</u>
8015 mod gasoline/8020(602)	min. of 3 x 40 ml VOA	2 drops HCl to pH <2
8015 mod diesel/8020(602)	2 1-liter & 3 x 40 ml VOA	2 drops HCl to pH <2 (applied to VOA's)
418.1 (TRPH)	2 1-liter amber	10 drops H ₂ SO ₄ to pH <2
Organic Lead	2 1-liter amber	no preservative suggested
HOC - 8010 (601)	min. of 3 x 40 ml VOA	no preservative suggested

Items Needed:

Water Level Indicator
 Disposable Bailers
 Generator
 Grundfos Pump and Reel
 Grundfos Pump Control Box
 Hydac Cond/Temp/pH Meter
 Liter Bottles
 VOAs

Distilled Water
 4 Buckets
 Bottle Brush
 TSP Detergent
 Stainless Steel Cable or Poly Rope
 Cooler with Ice
 Socket set and Allen Wrench (CNI Key)
 Plastic sheeting

Items Needed for Surveying:

Topcon AT-F7 Transit
 Tripod
 Stadia Rod

SOP-6
Quarterly Well Monitoring
Rev 6/05

QUARTERLY WELL MONITORING

- 1) Give the site manager advance notification of field activities. Arrange for a sufficient number of drums. Obtain a site plan with the location and ID's of the wells to be monitored and a copy of the table from the last quarterly report with the previous groundwater data.
- 2) Open well heads. This may require a socket or a special allen wrench.
- 3) Set up decon station per SOP-5. Measure groundwater depths with water level indicator as per SOP-5 before any other action is taken. If the depth to the bottom of the monitoring well is unknown, reel out the water level indicator until you feel the probe contact the bottom. You may have to raise and lower the probe several times to "feel" contact with the bottom. The probe is not very heavy, and the bottom of the well may have a cushioning layer of silt. Record the depth of the well once you feel confident the probe is at the bottom. Note odors from well.
- 4) Calculate the linear footage of water in each well, by subtracting the depth to water from the total well depth. To obtain the casing volume in gallons, multiply the linear footage by a constant for the given well casing diameter. Typically, three casing volumes are purged from each well prior to sampling. **Always** Round up - if 3.4 gallons, then purge 4 gallons - if 12.1 gallons, then purge 13 gallons.

<u>Casing diameter</u>	<u>Gallons per linear foot</u>
2"	0.17
4"	0.66
6"	1.50
8"	2.60

- 5) After measuring all water levels, begin purging the wells in order of the cleanest to the most contaminated based on last quarter's data. Well purging procedures are outlined in SOP-5. While wells containing free floating product may not be sampled, the project manager may want the free product removed manually by bailer. Check with the project manager before bailing LPH. You may find that for shallow wells, it may be quicker to bail manually rather than set up the pump. Place purge and decon water in a 55-gallon drum or treat on site. Do not mix purge water from different wells in one drum. Record all purge data on Groundwater Sampling Field Logs. Record "LPH" and the thickness in feet and inches (to nearest 1/16 of an inch) in the comments section if a measurable level of LPH present. If non-measurable amount present then record "Sheen" in the comments section.
- 6) When the well has recovered at least 80% of its' original water level, collect samples using a clean, new disposable bailer. Use a new disposable bailer for each well. Make sure the rope or line is tied securely on the bailer, you don't want to go fishing. Sample in order of the cleanest to the most contaminated. If required, collect field (equipment) blanks.
- 7) Trip blanks are a QA/QC procedure that must be collected at every site. Obtain a trip blank from the laboratory. They will make them up for you. The trip blank to taken unopened to the site and is kept with the other samples in the cooler unopened during the day's sampling. Label the bottle as an arbitrary monitoring well. For example: if there are 5 monitoring wells to be sampled at the site, the trip blank should be labeled as if it were a sample from MW6. The trip blank is never opened and it is used to determine if any contaminants are introduced by the laboratory or during transportation of the samples.
- 8) Field (equipment) blanks are a QA/QC procedure to be collected at the project manager's discretion (or always for LACDPW sites). To collect a field blank decon a bailer thoroughly; pour distilled water into the bailer; pour the distilled water from the bailer into appropriate sample bottle(s) for the analysis

to be performed, allow for no headspace; label the bottle as an arbitrary monitoring well. For example: if there are 5 monitoring wells to be sampled at the site plus a trip blank, and a field blank is to be collected, the field blank should be labeled as if it were a sample from MW7 (the trip blank is MW6). If a disposable bailer is used for sampling, use a new disposable bailer to collect the field blank.

- 9) Label sample containers when they are dry (refer to SOP-1). Place vials from each well in a separate plastic zip lock bag. Put bag in an ice chest and document samples and analyses required on a chain of custody (see attached examples).
- 10) Replace the locking caps, and the covers. Cover and label the drums of waste water. Place the drums on site in a location selected by the site manager. Usually, this will be near a dumpster or in the back, away from public view. Labels should face outward.
- 11) Decon all equipment per SOP-5 before leaving the site.

In general, groundwater sampling will be performed in accordance with LUFT guidelines. Several local agencies require that groundwater sampling occur under slightly different guidelines. Check with the project manager to find out which sites require special groundwater sampling procedures. Typically, the following apply:

Orange County Health Care Agency Requirements

No special requirements. Water sampling will be performed as per the State Water Resources Board's LUFT manual.

LARWQCB Groundwater Requirements

- o Purge a minimum of three well volumes if recovery is fast, or one borehole volume if recovery is slow (water does not recover to 80% of original level within two hours).
- o The last three readings must be within 10% for conductivity, temperature, and pH to show stabilization. This means that all three consecutive readings must be within these limits - the first with the middle, and the first with the last, and the middle with the last. For instance, pH readings of 6.92, 6.95, and 7.00 would be sufficient.
- o Even though there are no guidelines for turbidity, the measurements should be less than 10 NTU, or meet the baseline level established during development, upon completion of purging. Check with project manager if you use the baseline turbidity level.
- o Prior to sampling document recovery time by measuring the water level in each well to prove that at least 80% recovery has occurred.
- o A trip blank must be collected.
- o In the comments column of the chain of custody, write "Prepare laboratory report in WIP format."

San Diego Department of Health Services Groundwater Sampling Requirements

- o SDDHS does not encourage purging wells until dry.
- o Purge one borehole volume of water if recovery is fast, collecting pH/temperature/conductivity measurements while purging, then remove an additional one-half borehole volume of water. If the first and second measurements vary by less than 10%, purging is considered adequate. If not, keep purging water in one-half borehole volume increments until the measurements vary by less than 10%,

or three borehole volumes have been removed. Obtain three consecutive pH/temperature/conductivity measurements that are within 10% of each other.

- o If recovery is slow (water does not recover to 80% of original level within two hours) purge only one borehole volume of water.
- o Prior to sampling document recovery time by measuring the water level in each well to prove that at least 80% recovery has occurred.

Ventura County Environmental Health Division
Groundwater Sampling Requirements

- o A trip blank and a duplicate sample must be analyzed for each site.
- o Custody seals must be placed over the cap of each sample.

Under certain conditions the calculated purge volumes will need to be calculated in borehole volumes instead of well casings volumes. Use the following to calculate borehole volume in gallons.

<u>Well I.D.</u>	<u>Bore Volume</u>
2"	0.90 gal/ft. in water
4"/or nested wells	1.70 gal/ft. in water

The completed groundwater sampling log must contain:

- pH/temp./conductivity and turbidity measurements indicating stabilization
- time and volume of water removed at each pH/temp./conductivity measurements
- total volume of water purged
- name of personnel performing sampling
- date and project number
- problems or unusual conditions arising during purging or sampling, such as the well going dry during purging, water in the well vault, missing well caps or locks, odors, appearance of purge water, etc.
- 80% recovery measurement and time of measurement after purging and before sampling

All chains of custody for the client's groundwater sites must contain the consultant work release number, station identification number and client contact among the other items to be filled out. Check the groundwater sampling field log and chain of custody for completeness, accuracy and neatness. If you have any questions, call!!!

Make sure that the date and time of relinquished and accepted at the lab are the same on the chain of custody. Also, make sure the lab fills in the sample condition information and signs for the samples on the chain of custody

Santa Barbara County Environmental Health Services
Groundwater Monitoring Guidelines

I. Groundwater Monitoring

- A. Groundwater levels are to be monitored/measured in **all wells** in a short time span.
- B. Measure the groundwater levels (correct for "free product" thickness).
- C. Use a clear bailer to check for the presence of "floating product," sheen, and odors.
- D. Replace well cover until ready to purge well.

II. Purging

- A. Amount: generally 3 to 5 (no more than 10) well volumes; via bailer, pumps, or vacuum truck.

- B. Parameters (pH, temperature, conductivity) shall stabilize while purging.
 - 1. Measure the parameters of a small volume (i.e., a 500 ml) of the water as it is removed from the well. Measure the parameters initially and at regular volume intervals (e.g., after every well casing volume). More frequent testing may be needed if the well is known to go dry.
 - 2. Wells must be allowed to recharge prior to sampling (see section G of the Santa Barbara County LUFT Manual).
- C. Slow recharging wells are wells that are purged dry before removing 3 well volumes of water, and take more than **two (2)** hours to recharge.
 - 1. Note this on the field records and estimate the number of well volumes removed.
 - 2. Allow the well to recharge a minimum of two (2) feet and then sample.
 - 3. **Sample wells no later than 24 hours after purging.**
 - 4. Note the water level and percentage of recharge in the report.

III. Sample Collection

- A. Use either a decontaminated Teflon, stainless steel, or disposable bailer.
- B. Sample containers are to be supplied and certified by a laboratory:
 - 1. VOAs of 40 ml volume (at least 3 per well – check with lab and the PM for specific requirements); fill VOAs first to reduce volatilization.
 - 2. 4 oz sample containers for Pb (metallic lead) analysis (if needed).
- C. Fill containers by pouring along the inside of the vial to reduce volatilization.
- D. Form a positive meniscus with the water, to avoid trapping air, before placing the cap on the VOA. **Samples with headspace are not acceptable for analysis.**
 - 1. Check for bubbles by inverting and tapping gently to dislodge bubbles.
 - 2. If bubbles are found, uncap and repeat steps C and D.
- E. Label all samples and store immediately in an ice chest at 4 degrees Celsius filled with ice.
- F. Be careful to properly decontaminate equipment between each and every well.

**NON-HAZARDOUS
WASTE MANIFEST**

1. Generator's US EPA ID No.

Manifest
Document No.2. Page 1
of

3. Generator's Name and Mailing Address

**Western Area Retail Remediation Administrator Exxon Mobil Corporation
Global Remediation - Retail Projects****4. Generator's Phone (310) 212-2938 Torrance, CA 90504****Maria Guensler**

5. Transporter 1 Company Name

6. US EPA ID Number

Environmental Resolutions Inc.A. Transporter's Phone
(949) 457-8950

7. Transporter 2 Company Name

8. US EPA ID Number

Belshire Environmental/Nieto and Sons

B. Transporter's Phone

(949) 859-1077

9. Designated Facility Name and Site Address

C. Facility's Phone

Crosby and Overton**1610 West 17th. Street Long Beach, CA 90313****(562) 432-5445**

11. Waste Shipping Name and Description

12. Containers

No. Type

13.
Total
Quantity14.
Unit
Wt/Vol

a.

Non-Hazardous Waste Liquid Not Regulated by D.O.T.**001****TT****291****G**

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

Purged Groundwater**15**

15. Special Handling Instructions and Additional Information

ERI 3163-13**ExxonMobil 18MLJ****5005 North Long Beach Blvd, Long Beach, CA.**

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Gary De Carlo of ERI on behalf of ExxonMobil

Signature

Month

Day

Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Gary De Carlo of ERI on behalf of ExxonMobil

Signature

Month

Day

Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

GILBERT BARRIA

Signature

Month

Day

Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Eric M. [Signature]

Signature

Month

Day

Year

FACILITY

ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest
Document No.

2. Page 1
of

3. Generator's Name and Mailing Address

Western Area Retail Remediation Administrator Exxon Mobil Corporation
Global Remediation - Retail Projects 3700 W 190th St, TPT #2-15

4. Generator's Phone (310) 212-2938

Torrance, CA 90504

Maria Guensler

5. Transporter 1 Company Name

Environmental Resolutions Inc.

6. US EPA ID Number

A. Transporter's Phone

(949) 457-8950

7. Transporter 2 Company Name

Belshire Environmental/Nieto and Sons

8. US EPA ID Number

B. Transporter's Phone

(949) 859-1077

9. Designated Facility Name and Site Address

Crosby and Overton
1610 West 17th. Street Long Beach, CA 90313

10. US EPA ID Number

C. Facility's Phone

(562) 432-5445

11. Waste Shipping Name and Description

a. **Non-Hazardous Waste Liquid Not Regulated by D.O.T.**

12. Containers

No.

Type

13.
Total
Quantity

14.
Unit
Wt/Vol

001

TT

297

G

D. Additional Descriptions for Materials Listed Above

L

E. Handling Codes for Wastes Listed Above

15

15. Special Handling Instructions and Additional Information

ERI 3163-13

ExxonMobil 18MLJ

5005 North Long Beach, Long Beach, CA.

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name
Gary De Carlo of ERI on behalf of ExxonMobil

Signature

Month Day Year
08 04 05

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name
Gary De Carlo of ERI on behalf of ExxonMobil

Signature

Month Day Year
08 04 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name
Richard Duran

Signature

Month Day Year
8 26 05

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year
10 8 26 05

ORIGINAL - RETURN TO GENERATOR